

Subject Index 1988

Corrigenda

Aso M., Hayakawa K. and Kanematsu K. : 29, 85(1988): page 86
Scheme 1 corrected and on p 87
Line 14 corrected, 1474

Arrowsmith R.J., Davies D.E., Fogden Y.C., Harris C.J. and Thompson C.: amino alcohol peptide isostere should be (- ψ -(CH(OH)CH₂NH)-), 962

Bowden M.C. and Pattenden G., : 29,711 (1988): formulae for citreoviral and citreoviridin have been corrected, 2386

Capon B. and Kwok Fu-Ch.: 27, 3275 (1986): in Tble 1 the value of k_{H+} for keonistalon of 2-hydroxyindene has been corrected, 250

Colonna S., Manfreda A. and Annunziata R.:29,3347 (1988): footnote c should read c for mino regioisomer only, 5378

Colonna S., Manfredi A. and Annunziata R. : 27, 3347(1988): footnote c corrected, 6378

Gaoni Y. : 13, 1591(1988): synthesis of *cis* and *trans*-2,7-methanoglutaric acid should read *cis* and *trans*-2,4-methanoglutaric acid, 3498

Hall H.K., Ramezani M. and Saeva F.D.; 29, 1235(1988): intermediate used in synthesis of compd C.N, id dangerous, 2890

Harnden M.R., Jennings L.J. and Parkin A.:29, 4013(1988): scheme on p 4013 has been corrected, 5450

Karušo P. and Scheuer P.J.: 28 4633(1987): correct values for tabulation on p4633, 2506

Maruoka K., Araki Y. and Yamamoto H.: 29, 3101(1988): addition to ref Tet Letters,22, 4213(1981), 4778

Morris I.K. and Ward A.D.: 29, 2501(1988): Photofrin is only available under experimental drug regulations, 3394

Moss R.A. and Wlostowska J. : 29, 2559(1988): Note 17 has been corrected, 4202

Nakayama J., Akimoto K., Nijima J. and Hoshino M. : 28, 4423(1987): accepted date should

read 6 June not 6 January, 506

Perdomo G.R. and Krepinsky J.J.: 28, 5595(1987); fifth line on p 5596 corrected, 2002

Fyne S.,G., Griffith R. and Edwards M.:29, 2089(1988):Table 1, entry 3, ratio 2c:3c should be 79:21, 5042

Tyndall D.V., Al Nakib T. and Meegan M.J.: 29,2703(1988): on p2704, the second paragraph has been corrected, 5330

Williams R.V., Sung C.-L.A., Kurtz H.A. and Harris T.M. :29,19 (1988): authors apologise for oversight of an important reference, now given, 506

Zhang H.X., Guibe F. and Balavoine G. : 29, 619 (1988): Pd-catalysed hydrostannation of methyl propynoate gives with 100% selectivity the corresponding α -tributylstannyl propenoate and not the E β -tributylstannyl isomer, 3874

Acceptor-donor compounds

prostacyclin analogs stabilised by acceptor substituents at 5-position, 4285

Acetals

4-pentenyl-, moiety incorporated in protecting groups, cleavage under neutral conditions, 6549

acrolein dialkyl-, reduction with CrCl₂ to γ -alkoxy substituted allylic Cr-reagent for selective synthesis of *erythro* 1,2-diols, 5263

aliphatic-, and aldehydes, reaction with 1-ethoxy-3-trimethylsilyl-1-propene in presence of TiCl₄ to give 2-formyl allyltrimethyl silanes and 2-formyl-3-alkoxyalkyl-trimethylsilanes, 4717

and aldehydes, conversion into 1,3-dithianes with high chemodifferentiation, 3971

and oxazolindines and imidazolidines as chiral auxiliaries, diastereoselective conjugate addition, 4411

Barbier-type allylation with allyl bromide in Pb/Al bimetal redox system, 1721

C,0,0-tri(trimethylsilyl)ketene-, and aldehydes, stereoselective synthesis of (E)- α,β -unsaturated acids, 4551

chiral-, TiCl₄ induced ring opening, route to aryloxy and alkoxypropanolamines β -adrenergic blocking agents, 2955

chiral bicyclic-, *cis*-fused, prep from glycals via cyclisation of ω -unsaturated glycosides of 2-bromo-2-deoxy-glycopyranosides, 3691

cyclic ether-, prep from 2-benzenesulphonyl derivs, new mild glycosidation, 4873

cyclic ketene-, reaction with phenyl isocyanate through zwitterion to yield spiro compds, 2327

cyclic-, synthesis from γ -hydroxy ethers via C-H activation, 2215

initiated cyclisation of allylsilanes to highly functionalised piperidine derivs, 3247

intramolecular radical cyclisation, cyclopentane synthesis and annulation, 897

ketene-, mixed, silica-gel catalysed cyclisations, 5241

ketene-S,S-, as 1,3-dipolarophiles, reactivity towards electron deficient azides, 6475

ketenealkylsilyl-, reaction with ethyl propionate, 6443

monothio-, and monoseleno-, reactivity towards oxidation, synthesis of substituted 2,3-dihydrofurans, 2179

related to ANSA chain of streptovaricins, group selective reduction, conformational and stereochemical analysis, 4085

silyl ketene-, alkylation with dienyliron complexes, application to formation of quaternary C-centers, 869

S,N-, new entry by selective reduction of alkylthio-methyleniminium salts by use of trimethoxysilane and dilithium 2,3-butandiolate, 5771

synthesis of β -alkoxy imidoal cyanides, reaction of isocyanides, 6773

- templates of-, asymmetric syntheses, prep of enantiomerically pure mevinolin analogs, 3757
- Acetoxylation**
Pd-catalysed 1,4-diacetoxylation of conjugated dienes, evidence for (π -allyl)Pd(II)(quinone) complexes involvement, 2243
- Acidity**
constants of protonated simple carbonyl compds, literature data and indirect estimates, 5541
thermodynamically based scale of solute H-bond acidity, 1587
- Acridines**
9-alkyl and 9-aryl-, synthesis from [2-(trimethylsilyl)-ethoxymethyl] protected acridone, 5123
covalently linked to oligo- α - and oligo- β -deoxynucleotides, solid phase synthesis, 5905
- Acylation**
direct di-, of Schiff bases, 5113
N-, induced Hofmann-like fragmentation of 1-methyl-1-aza-4-cyclanones, use in synthesis of 2-aza-decalones and 2-azahydrindanones, 3303
O-, and C-alkylation of benzoylacetonitrile mediated by Hunig's base-MgCl₂, 3437
O- and C-, of enolates by ketenes, 1673
of allylic mercurials, prep of allylic ketones, 6761
selective-, of amines, new reagents for, 2741
- Addition reactions see also**
- Cycloaddition**
1,2-, products from reaction of substituted indenones with 4-phenyl-1,2,4-triazoline-3,5-dione 2769
1,3 λ^2 -azaarsinines and alkyne dienophiles to give λ^3 -arsinines, 539
1,4-, of Grignard reagents to 3-substituted 5-trimethylsilyl-2-cyclohexenones 325 to
1, trisubstituted enones, new BF₃ promoted cyclisation, 6693
1,4-regioselective-, benzene and acetonitrile to 1,3-butadiene, iodofunctionalisation with I(py)BF₄, 6497
1,6-, of organo-Cu reagents to 3-ethynyl-2-methyl-2-cyclopentenone, 5851
2-benzoyloxy-3-pentanone and SnCl₄, geometry of monomeric chiral α -alkoxy ketone chelate, 5881
2-bromoazinomethyl-2-propenyl ethers to aldehydes, ketones and imines followed by Pd-catalysed cyclisation, prep of 3-methylenetetrahydrofurans and 3-methylenepyrrolidines, 3579
4,3-, to α,β -unsaturated ketones via η^2 C-C binding to a ruthenium complex, 6737
6-[(dimethylamino)methylene]amino-1,3-dimethyluracil, [4+2] cycloaddition with electron deficient olefins to give pyridol[2,3-d]pyrimidines; with DMAD or azodicarboxylates Michael addition occurs leading to pyrrolo[3,4-c]pyridines and theophylline derivs, 4401
 α -amino acid derivs to conjugated aldehydes, synthesis of β -substituted serines, 3109
 β -conjugate-, and β -hydroxyalkylation of enones, new method, 5413
acetylenedicarboxaldehyde monoacetal with electrophilic alkenes and alkynes to give Diels-Alder and pseudo-Michael substitutions, 1025
adduct formation by methylated cyclodextrins, mass spectrometric investigation, 2103
adducts, diastereomeric, of amino ester derived from new chiral porphyrin with C₂ symmetry, HPLC behaviour, 5271
adducts, of bilirubin *exo*-vinyl N-acetyl-L-cysteine, CD, amplification of optical activity by remote chiral functionality, 3507
adducts of mitomycin C and DNA, 4673
aldoximes to organo-Li reagents to give hydroxylamines, 3455
asymmetric-, catalytic, of divinylzinc to aldehydes, enantioselective synthesis of sec-allyl alcohols, 5645
asymmetric Diels-Alder-, chiral dienes as conformational model, 5225
asymmetric Michael-, involving chiral imines, stereochemical data in support of cyclic-like transition state, 2667
asymmetric-, imines to α -sulphoxide carbanions, 6101
benzeneselenenate adducts of glycol ethers, oxidative ring contraction, synthesis of showdomycin, 2711
benzocyclopropene and dithalocarbene, 675
benzoyloxy radical-, at C-8 of caffeine, control of C-5 methylation, 2055
bromine gas to crystalline dibenzobarrelens, an enantioselective carbocation rearrangement in solid state, 1485
C-C bonds and aryl radicals generated by electroreduction of aryl halides, 639
conjugate-, internal nucleophile to chiral vinyl sulphoxides with stereogenic center at allyl-C, "intramolecular" double asymmetric induction, 3121
conjugate-, of 2-alkenyl-2-imidazolines, prep, condensation reactions of α -lithio-imidazolines, 5001
conjugate-, of α -enones to alkyl groups in aqueous media under ultrasound, mechanistic aspects, 5373
conjugate-, of alkyl groups to α -enones, optimisation under ultrasound, 5369
conjugate-, of amines to chiral (E) and (Z) vinyl sulphoxides, enantioconvergent and kinetic process, 2089
conjugate-, of crown-potassium enolate complexes, 6943
conjugate-, of Grignard reagents to α,β -unsaturated ketones mediated by diamine zinc(II) monoalkoxides, 3593
conjugate-, of N-substituted organo(silyliminomethyl)copper to α,β -unsaturated carbonyl compds, 355
conjugate-, on α -phenylthio- α,β -unsaturated oxazolines, synthesis of 3,4-disubstituted coumarins, 5901
conjugate-, to 5-phenylsulphinyl 2-substituted 2-cyclopentenones, new route to 4,5-disubstituted 2-cyclopentenones, 4189
conjugate-, to vinyl phosphine oxides in aqueous medium, 937
Cu-catalysed-, of stannylborate reagent to 1-alkynes yielding 1,2-borostannyl-1-alkene, 261
cuprate-, to 5-methoxy-2-cyclopentenones, diastereofacial selectivity, 439
cuprate-, to 5-substituted cyclopentenones, theoretical evaluation of stereoelectronic diastereofacial selectivity, 443
cuprate-, to a synthetic dihydropyran-4-one, formation of (\pm)-forskolin, 2031
diastereoselective conjugate-, of optical anions to 2-(R)- and (S)-benzyloxy-2,5-dihydro-4-(3,4-methylenedioxybenzoyl)furan, total synthesis of lignans(-) and (+)-burseran, (-)-cubebin, and (-)-hinokinin, 3599
diastereoselective conjugate-, with acetals, oxazolindines and imidazolidines as chiral auxiliaries, 4411
diastereospecific-, of organo-metallics to (S)-2-alkoxy-1-(1,3-dithian-2-yl)-1-propanones and its application to synthesis of (-)-trachelanthic acid, 3955
dimers of 1-alkoxy-2-benzopyrylium-4-olates, structures, 317
electrophilic-, to epoxy cycloalkenols, regiochemistry and stereochemistry, 2097
free radical-, of 1-thiosugars to alkenes, new approach to synthesis of 1-thioglycosides, 4293
heteroconjugate-, using Eliel's camphor template, use in asymmetric synthesis, 4773
I₂ to alkynes on alumina, synthesis of diiodoalkenes, 35
induced radical-, of tributyltin hydride and azobisisobutyronitrile, synthesis of higher carbon sugars, 2335
intramolecular Diels-Alder-, of furan with benzyne, synthesis of 2,3-dihydro-1H-phenalene deriv, 1883
intramolecular Diels-Alder-, of selenoaldehydes, 6965
intramolecular-, of alkoxythiocarbonyl free radicals to acetylenes, synthesis of lactones, 6127
intramolecular-, of Kolbe radicals generated from β -allylaminoalkanoates, prep of pyrrolidines, 2797
intramolecular-, of N-benzyl diazoacetamides, Rh(II) acetate-catalysed, synthesis of cycloheptatriene, 2639
intramolecular-, of α -aryl radicals onto α -position of α,β -unsaturated N-alkylamides, 6657
intramolecular-, of radicals to aldehydes to form cycloalkanols is not reversible, 1645
ipso adduct, of vinylidene-cyclohexadiene, isolation by photolysis of 1-(p-ethoxyphenyl)vinyl bromide and alcoholysis to vinyl ethers, 6141
LiMe₂Cu to *trans* and *cis*-Z vinyloxiranes, diastereoface selectivity to give *syn*-Z diol and *anti*-E diol, 913
lithioacetoneitrile to α -oxoketene dithioacetals, route to 4-substituted and 4,5-annulated pyridines, 6633
low-temp-, of 1,3-dienes to ethyl

- propiolate via intermediacy of propargyl cations generated from triethyl orthopropiolate, 3407
- methanesulphenyl fluoride to unsaturated substrate, 2311
- Michael-, and allylic substitution competition between in reaction with carbanions α to nitriles, 1713
- NaN, to alkynylphenyliodonium tosylates, generation, trapping and fate of alkylidenecarbene-iodonium ylides, 1887
- new-, of trialkyl phosphite and alkyl halide to nitron, prep of N-substituted 1-(alkoxyamino)-alkylphosphonates, 663
- nucleophilic conjugate-, of amines to 2-hydroxyalkylpropanoates, diastereoselection, 949
- nucleophilic-, of enolate anions to N-methoxycarbonylimines of α -methoxy carbamates, new synthesis of β -amino acids, 231
- olefins to ribofuranosyl radical, synthesis of showdomycin, 351
- oxazole endoperoxides to methanol, 1007
- P-fluoro-ylides to aldehydes and ketones to give 2-fluoro-oxaphosphetanes that convert- (depending on substituent at C-3 and C-4) into allylphosphonates or vinylphosphonates, 3663
- photo-,alkenes and alcohols to sodium phthalimide, 1071
- regio- and chemo-selective-, of alkynyltin reagents to 2-position of 3-acylpyridines activated by methyl chloroformate, synthesis of 2,3-disubstituted 1,2-dihydropyridines, 1785
- regio- and stereo-specific class 2 tandem Michael addition-cycloaddition reactions of oximes, 4323
- regioselective mono-, of lithium enolates to N-carbamoyl-L-pyrroglutamates, 4303
- regioselective-, of Grignard and lithium reagents to 2-[(benzylidene)amino]benzonitrile and 2-[(diphenyl)methylene]amino]benzonitrile, 4265
- regiospecific-, of hydrazoic acid and benzylamine to 1-(arylsulphonyl)bicyclo-[1,1,0]butanes, synthesis of *cis* and *trans* 2,7-methanoglutaric acids, 1591
- ruthenium catalysed-, of N-protected amino acids to propyne, regioselective synthesis of isopropenyl esters, 5365
- samarium iodide initiated-, of olefins to fluoroalkyl iodides, 5129
- selective-, of organo-Zn compds to keto group of (-)-menthyl phenylglyoxalate to give (-)-menthyl mandelates, 2175
- stable and reactive conformations of N-enoyl-bornane-10,2-sultams in absence of Lewis acids, asymmetric 1,4-hydride additions, 3559
- stepwise electrophilic-, with 3-membered cyclic intermediates, mechanistic information via use of steric vs electronic effects, 6207
- stereoselective conjugate-, of sulphoxide stabilised carbanions to α,β -unsaturated esters, 5821
- syn,anti*-selective-, alkyl- and aryl diazoalkanes, with dichlorocyclobutene, 6593
- syn,anti*-selective-, *cis*-disubstituted cyclobutenes to diazoalkanes, 6597
- syn*-stereoselective-, *cis*-3,4-disubstituted cyclobutenes to monosubstituted diazomethanes, 6601
- three step addition-addition-elimination pathway, prep of "dimers" of pyrazolidin-3-one-azomethinimines without centre of symmetry, 2939
- vitamin B-12, photoelectrocatalysed-, of alkyl bromides and carboxylic anhydrides to methyl 2-acetamidoacrylate yields 2-amino esters, 1601
- Z-dithiohex-3-ene-1,5-diyne, and carbonyl compds, 4681
- Aggregation**
- behaviour in lipophilic [2.2.2]-cryptand and in 18-membered ring steroidal lariet ethers, 4065
- number of-, increased nucleophilic activity with ion pair aggregates of tetrabutylammonium bromide and n-propyl iodide, 2201
- molecular-, and its applicability to synthesis, Diels-Alder reaction, 3745
- Aglycones**
- calicheamicin deoxyaglycone model, synthesis by intramolecular acetylide cyclisation, 4217
- octahydronaphthalene subunit of kijanolid and tetronolide, stereoselective synthesis, 3541
- of 8-methyl benzonaphthopyrone antibiotics, gilvocarin M, virenomycin M and albacarcin M, 2517
- oleandomycin, synthesis via intact aglycone oleandolide, 3975
- secoxyloganin aglycone, protected form, synthesis, 3511
- Alcohols**
- 1-phenylethanol, reduction by etherated boron trifluoride-triethylsilane system, stereoisotopic study, 5793
- 2°-, conversion to their chlorides with retention of configuration, 3053
- 2-cumyladamantan-2-ol and its n⁺-Cr(CO)₃ complex, derived carbocations, unusual behaviour, 4787
- 2,3-epoxy-3-arylpropanol, synthesis via reaction of aromatic aldehydes with β -hydroxyethyltriphenylarsonium bromide, 5295
- 2,3-epoxy-, direct conversion into hydroxy carbonates under mildly basic conditions, 6389
- 2,3-epoxy-, enzymatic resolution, intermediates in synthesis of sex pheromone of Gypsy moth, 2455
- (4-methoxybenzyl) protection of OH functions under mild acid conditions, 4139
- α -acetylenic-, isomerisation to α,β -ethylenic carbonyl deriva, Ti/Cu and Ti/Ag catalysts, 6253
- α -allenic-, nucleophilic substitution via Murahashi method, synthesis of 1,3-dienes, 1701
- α -ethynyl tertiary-, synthesis of 3(¹⁴H)-furanones, 5941
- γ -butyrolactols, new synthesis via Pd-catalysed regioselective oxidation of 1-alken-4-ols, 5181
- ω -acetylenic-, intramolecular cyclisation followed by hetero Diels-Alder reaction to form functionalised spiroketals, 2947
- acetylenic-, optically active, synthesis, 2737
- and alkenes, photoaddition to sodium phthalimide, 1071
- alkoxides derived from oxiranylcarbinols, reaction with alkyl halides, cine O-alkylation of oxiranylcarbinols, 705
- allenic-, reduction via *Saccharomyces cerevisiae*, 3797
- allyl-, dimethylidioxirane oxidation yields functionalised tetrahydrofuran and tetrahydropyran derivs via intramolecular nucleophilic addition of OH group to intermediate allene dioxepide, 4791
- allylic-, and chiral epoxides, synthesis by use of optically active p-tolyl sulphanyl group as chiral auxiliary, 2851
- allylic-, approach to via reaction of α,β -epoxysilanes with metallated alkylaryl sulphones, 2497
- allylic-, monodeuterated, stereochemical assignment, vicinal isotope effects in ¹³C NMR, 6095
- allylic-, prep of allylic sulphides with 1-phenyl-tetrazole-5-thio group using S,S'-bis(1-phenyl-1H-tetrazol-5-yl) dithiocarbonate and reactions involving allylic sulphides, 4105
- allylic-, reaction with 4-morpholinesulphenyl chloride, prep of 4-(2'-alkenesulphenyl)-morpholines, 3251
- allylic-, selective amination via intramolecular amidomercuriation, 3789
- allylic-, trigonal carbons, prim and sec deuterium effects on ¹³C NMR chemical shifts, 3945
- bis-acetylenic-, oxy-Cope rearrangement to mixtures of E and Z-enynes, enolisation and electrocyclic ring closure to methylenecyclopentenones, 6865
- chiral 2-epoxy-, synthesis of chiral 2-hydroxyacid benzoates, 2701
- chiral homoallylic-, functionalised, optically active α -sulphanyl epoxides as precursors, 5929
- conversion to ketones and aldehydes by Pfitzner-Moffat oxidation, phenyl dichlorophosphate as activating agent, 3167
- conversion to methylthiomethyl ethers, 3773
- cyclic homoallylic-, fragmentation, synthesis of Z-allylic acetates, 2119
- cycloalkanol-, formation by intramolecular addition of radicals to aldehydes is not reversible, 1645
- cycloalkenols, regio- and stereoselective oxidative cyclisation, substituent directed with ceric ammonium nitrate, 1771
- cyclopropylvinylcarbinols, optically active, regio- and stereo-specific ring expansion, diastereoselective synthesis of *cis* Quercus-lactone b, 1537
- diverse-, Swern oxidation using oxalyl chloride-DMSO yielded products resulting from electrophilic chlorination, 49
- (E)- and (Z)-enynes, synthesis via ring sission of cyclic β -halogeno ethers with samarium di-iodide, 6517

- epimerisation by Ni-containing complex reducing agents, 1383
- epoxide-, functionalised, synthesis of butadiene-iron tricarbonyl series, 2449
- epoxy-, via regiocontrolled functionalisation of 2,5-dimethyl-2,4-hexadiene in presence of Ti or V, 531
- epoxy cycloalkenols, electrophilic additions, regiochemistry and stereochemistry, 2097
- fused bicyclic systems with allylic angular OH group via annulation method, 4053
- homoallylic-, from (Z)-1,4-di(2-tetrahydropyranyloxy)-but-2-ene and Grignard reagents, 4-carbon homologation, 3373
- homoallylic-, synthesis via Pd-catalysed coupling of organomercurials and vinylic oxetanes, 5069
- homoallylic-, via reaction of aldehydes with allyl halides in presence of trialkylstibine, 1395
- homopropargyl-, regioselective functionalisation via intramolecular hydrosilation of acetylenes, 6955
- (\pm)-Ireland-, key intermediate for tirandamycin A, stereoselective synthesis, 5285
- optically active allyl-, and (S)-1-phenyl-1,2-butadiene, prep and separation of diastereoisomers, use of 1-naphthylphenyl-methylsilyl group, 1355
- or ethers containing benzophenone, irradiation with ketene dithioacetal S,S-dioxide(2), addition of 1-hydroxyalkyl and 1-alkoxyalkyl-radicals to 2 followed by H-transfer, 5367
- oxidation of-, by metal nitrates supported on silica gel, 6265
- oxidation of-, using dimethylsulphoxide and trichloromethyl chloroformate, 6619
- perfluoroalkylated-, Koenigs-Knorr reaction, abnormal issue, 2193
- polyfunctional sec-, via reaction of aldehydes with $\text{RCu}(\text{CN})\text{ZnI}\cdot\text{BF}_4$, 3887
- prim and sec-, ester interchange of methyl and ethyl carboxylic esters without solvent, 4567
- protected and deprotected as t-butyl ethers in pheromone synthesis, 2951
- protected propargyl-, transformation into 3,5-disubstituted butenolides, 3445
- R-(+)- β -citronellol, synthesis of (+)-integerrineic acid lactone, 2139
- reaction with phosphorous diesters, transesterification in presence of titanium, 3327
- ring opening of glycidyl tosylate with 1-hexadecanol, enantioselective synthesis of platelet activating factor and its enantiomer, 4393
- sec-, access to hydrocarbons via reduction of dithiocarbonates with n-Bu₃SnH-Et₃B, 6125
- sec-allyl-, enantioselective synthesis by catalytic asymmetric addition of divinylzinc to aldehydes, 5645
- sulphur-assisted O-carbonylation with CO in presence of DBU, 4767
- tertiary-, tetrahydropyranylation, triphenylphosphine as mild catalyst, 4583
- via reduction of aldehydes and ketones with unsolvated magnesium diisopropylamide, 139
- via asymmetric borane reduction of ketones catalysed by oxazaborolidine, 4453
- vicinal acetoxy-, or oxiranes, via sodium perborate oxidation of cyclic and acyclic alkenes, 2967
- with ester group, new selective oxidation with an oxoammonium salt, 5671
- xanthene carbinol or xanthenylidene deriv, formic acid reduction to piperidylxanthene, 5701
- Alcohol halogen derivatives**
- 2-bromoethanol, flash vacuum thermolysis, formation of α -bromoethylethers via 1-bromoethanol, 6489
- peptidic trifluoromethyl-, and ketones, synthesis and application as renin inhibitors, 4665
- Aldehydes**
- 1-(trimethylsilyl)-methylcycloalkane carboxaldehyde, rearrangement to one-carbon ring enlarged 2-(trimethylsilyl)methyl-cycloalkanones, 1815
- 1,4-keto-, and 1,4-diketones, new route to with application to synthesis of Z-jasmone and dihydrojasmone, 3587
- 2-arylacetaldehyde, titanium-catalysed aldol-type condensation with silyl enol ethers, prep of polycyclic aromatic hydrocarbons, 3885
- 2-phenylpropanal, enantioselective α -selenenylation, 5889
- 3-nitro-2-methoxybenzaldehyde, stereoselectivity of directed aldol reactions, effect of amine employed as base, 2247
- 4-hydroxy nonenal and coriolic acid, chiral syntheses, chiral complex of sorbic acid, resolving agent for an allylic alcohol as key intermediate, 3937
- 4-mono- and 4,5-disubstituted pyrrole-2-carboxaldehydes, synthesis, lithiation of 3-bromo-6-dimethylamino-1-azafulvene dimer, 3215
- α,β -dialkoxy-, 1-vinyl-1,2-diols and vinyl epoxides, enantioselective synthesis, 5685
- α,β -unsaturated-, β -alkylation; thioastannane-mediated prep of γ -alkoxyallyl sulphides, 2979
- α -arylseleno-, reactivity towards halogens and benzeneselenyl chloride, 5893
- α -sulphinylacetaldehyde, optically active, synthesis, 6775
- acetylenedicarboxaldehyde monoacetal, reaction with electrophilic alkenes and alkynes to give Diels-Alder and pseudo-Michael addition substitutions, 1025
- achiral-, reactions with diisopropyl tartrate modified (E)- and (Z)-crotylboronates: 5579
- aldose-, 2,3-O-isopropylidene derivs, unusual [2+2] cycloaddition with allylsilane catalysed by BF₃ etherate to give homoallyl alcohols, 4953
- and alkyl halides and acid halides, presence in reduction of nitrobenzene to aniline, 5083
- and ketones and imines followed by Pd-catalysed cyclisation, addition of 2-bromozincmethyl-2-propenyl ethers prep of 3-methylenetetrahydrofurans and 3-methylenepyrrolidines, 3579
- (E)- α -methyl- α,β -unsaturated-, highly selective synthesis, 3895
- aliphatic-, and acetals, reaction with 1-ethoxy-3-trimethylsilyl-1-propene in presence of TiCl₄ to give 2-formyl allyltrimethylsilanes and 2-formyl-3-alkoxyalkyltrimethylsilanes, 4717
- alkylidenemalonaldehydes, first synthetic approach, 2861
- and acetals, conversion into 1,3-dithianes with high chemodifferentiation, 3971
- and C,0,0-tri(trimethylsilyl)ketene acetal, stereoselective synthesis of (E)- α,β -unsaturated acids, 4551
- and ketones via conversion of alcohols by Pfitzner-Moffat oxidation, phenyl dichlorophosphate as activating agent, 3167
- and ketones via mild oxidation of 1,1-diorganometallics, new stereoselective approach to aldol products, 6697
- and ketones via mild oxidation of amines, 6701
- and ketones, fluorine ion induced reaction with phenyl-thiomethyltrimethylsilane, formation of β -hydroxyphenylsulphides, 3319
- and ketones, reaction with dicyclopentadienyltrium chloride, cleavage of C_p-Y π -bond, 6931
- and ketones, reaction with one equiv each of thiols and thioacetic acid, prep of asymmetric dithioacetals, 6729
- and ketones, reduction to alcohols via unsolvated magnesium diisopropylamide 139
- and ketones, reduction to methylene derivs using ammonium formate as catalytic H-transfer agent, 3741
- aromatic-, direct prep of N-phosphinoyl and an-sulphonyl imines, 3725
- aromatic-, reaction with β -hydroxyethyltriphenylarsonium bromide, synthesis of 2,3-epoxy-3-arylpropanol, 5295
- asymmetric allylation with optically active allylsiliconates, stereochemistry and mechanism, 5667
- asymmetric synthesis of threo- and erythro-sphingosines via asymmetric aldol reaction of α -isocyanacetate catalysed by chiral ferrocenylphosphine-gold complex, 239
- benzaldehydes and α -lithio-2-cyanodiarylmethane intermediates, diastereoselective reaction, stereocontrolled synthesis of *cis*-3,4-diarylisochroman-1-ones, 3777
- benzaldehydes, enones, acyl chlorides and allylic halides, reaction with Cu and Ti derivs from transmetalation of 2-cyanoethylzinc iodide, 2395
- benzoin condensation, γ -cyclodextrin thiazolium salt as holoenzyme mimic, 1635
- botryals, even C₂-C₄, α -branched, α -unsaturated aldehydes and their epoxy derivs, isolation from *Botryococcus braunii*, 2831
- by conversion of organic halides using electroreduced Fe(CO)₅, 6441
- catalytic asymmetric addition of divinylzinc, enantioselective

- synthesis of sec-allyl alcohols, 5645
- catalytic oxidation with H_2O_2 to carboxylic acids, 1967
- chiral-, resolution and enantiomeric excesses via chiral imidazolidines, 2675
- conjugated-, addition to α -amino acid derivs, synthesis of β -substituted serines, 3109
- direct conversion to esters using bromine as oxidant, 5087
- diterpenoid-, (+)-periodial, synthesis and absolute structure, 4591
- enals, homologated conjugated for C-glycoside synthesis via acid treatment of pyranosidic α -akoxy vinyl ethers, 5533
- enolisable-, derived N-tosylimines, generation and intramolecular cationic cyclisations, 3891
- formaldehyde and benzaldehyde, abnormal base catalysed reaction with 1-(2-hydroxyphenyl)-3-phenyl-1,3-propanedione, 241
- Henry reaction with 3-nitrobutanal, prep of branched nitrosugars, synthesis of unnatural D-evernitrose analogs, 6083
- homochiral epoxy stannane, 2.3:1 mixture of *cis*-Z and *cis*-E cyclisation products, 4871
- intramolecular addition of radicals to form cycloalkanol is not reversible, 1645
- muconaldehyde, and 2-methylmuconaldehyde, synthesis of isomers, 5991
- nucleoside 5'-, tributyltin radical induced cyclisation, 75
- oitolualdehyde, substituent effects on photochemistry, 5559
- one-carbon homologated-, via conversion of alkynes and alkenes, by hydrozirconation-isocyanide insertion-hydrolysis, 1631
- or ketones, chemoselective carbonyl alkylation and reduction, 3101
- organometallic meso diol and corresponding dialdehyde, stereoselective horse liver alcohol dehydrogenase catalysed oxidoreduction, 5769
- Paterno-Buchi cycloaddition to silyl and stannyl substituted furans, 6689
- pentaenals, regioselective photoisomerisation, effect of Me substituents, 853
- phenylacetaldehyde, implication in biosynthesis of phenanthroindolizidine alkaloid tylophorine, 807
- phenylacetaldehyde, selective synthesis, 1471
- prochiral-, asymmetric ene reaction with alkenes catalysed by chiral organo-Al reagent, 3967
- protected α -hydroxy-, and ketones, enantioselective synthesis via hydroxylation of metallated chiral hydrazones, 2437
- pyrrole-2-carboxaldehyde, 5-substituted, synthesis via lithiation of 6-dimethylamino-1-azafulvene dimer, 777
- reaction with allyl halides in presence of trialkylstibine to form homoallylic alcohols, 1395
- reaction with one equiv each of thiol and chiral thioacid, prep of chiral dithioacetals, 6733
- reaction with phosphorus nucleophiles, route to 3-substituted-2-phosphomethyl acrylates, 5201
- reaction with $Ru(CN)ZnI.BF_4$ to give polyfunctional sec alcohols, 3887
- reaction with trichloroacetone nitrile mediated by tri-n-butylstibine, synthesis of α,α -dichloro- β -hydroxynitriles, 5275
- reduction using lithium diisopropylamide as hydride donor, 4057
- seleno-, intramolecular Diels-Alder reaction, 6965
- stereoselective conversion into β -bromovinyl oxiranes mediated by $CrCl_2$, 6107
- tartaric-, differentially protected, synthetic equivalents, simple route to useful C-4 chiral synthons, 6163
- thermal reactions with δ -alkoxyallylstannanes, diastereoface selectivity, 2479
- via reduction of acid chlorides using hypervalent silicon hydrides, 1271
- Aldol reactions**
- a fulvene analog of-, functionalisation of 6,6-dimethylfulvene, 4997
- and reductions, use of optically pure binaphthyl cyclic silanes to give highest ee's for chirality transfer with organosilanes, 6199
- asymmetric-, of α -isocyanacetamides with aldehydes catalysed by chiral ferrocenylphosphine-gold complex, 6321
- asymmetric-, paraformaldehyde with α -isocyanocarboxylates catalysed by chiral ferrocenylphosphine-gold complexes, asymmetric synthesis of α -alkylserines, 235
- bismuth trichloride as new catalyst, 4719
- diastereoselective aldolisation of tetroses and pyranoses mediated by rhodium, 4649
- diastereoselective aldolisation to tetrose and pyranoses mediated by rhodium, 3761
- enantioselective-, of aldehydes and methyl ketones, mediated by chiral lithium amide bases, 337
- fluoride-catalysed-, stereochemistry, of enol silyl ethers, another non-chelate transition state, 2207
- of iododifluoroacetate-Zn and 2,2-difluoroketene silyl acetal, 1803
- syn* selective-, of titanium and zirconium dienolates, 1661
- transannular-, within macrocyclic lactones, approach to 8-membered carbocyclic rings, 6897
- with chiral ethylketones, control by chiral boron reagents, 585
- Alkaloids**
- 1-methoxyanthine-6-one, synthesis, 2421
- 1 β ,2 β -epoxy-1 α -hydroxymethyl-8 α -pyrrolizidine, identical with "subulacine N-oxide", 4943
- (\pm)-4-acetoxy-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, enantioselective hydrolysis catalysed by immobilised lipase, 567
- 5 α -cevanine-, ussuriene from *Fritillaria ussuriensis*, 1959
- 10-lithio-ergolinyl-urea, stereoselectivity of electrophilic substitution, effect of reaction conditions, 6429
- A-7(7a) 4 α - β H isotecocamine, stereospecific synthesis, 643
- (\pm)-actinidine, total synthesis by application of photoreductive cyclisation, 6113
- alexine, 3-epialexine and 7-epialexine, synthesis from D-glucose, 5441
- alexine, (1R,2R,3R,7S,8S)-3-hydroxymethyl-1,2,7-trihydroxypyrrolizidine[(2R,3R,4R,5S,6S)-2-hydroxymethyl-1-azabicyclo[3.3.0]octan-3,4,6-triol], isolation from *Alexa leiopetala*, 2487
- allopillicotoxin-, via ion-vinylsilane cyclisation, 6541
- (-)-alloyohimbane, enantioselective synthesis, 4509
- aluaniline-type-, construction of hexahydro-1,5-methanoazocino[3.4-b]indole fragment, 2361
- ant venom-, from *Monomorium* species, natural insecticides, 3061
- antimicrobial-, haliclonadiamine, structure and isolation from *Haliclona* sp., 3427
- aphanorphine, tricyclic alkaloid from *Aphanizomenon flos-aquae*, 4381
- aromatic yohimboid and protoberberine-, via intramolecular Diels-Alder reactions, 6725
- azabicyclo-, key intermediates, via enantioselective synthesis of 2-alkylpyrrolidines, 631
- azafluorenone-, synthesis via transition metal-catalysed cross coupling, 2135
- azaphenanthrene-, synthesis of eupolauramine, 4297
- benzo[c]phenanthridone ring formation via synthesis of 2-(2-furyl)-cycloalkanes, 3243
- bioactive-, naphthyridinomycin and quinoacarin, approach to 3,8-diazabicyclo[3.2.1]octane moiety via 1,3-dipolar cycloaddition of photo-generated azomethine ylides, 3525
- (\pm)-corynoline, (+)-11-epicorynoline, (\pm)-isocorynoline and (\pm)-11-epiisocorynoline, biomimetic synthesis from corysamine, 6621
- C-19 diterpenoid-, from *Delphinium barbeyi*, structure of barbeline, 2397
- camptothecin, chemical rearrangement to mappicine ketone, 6847
- CC-1065, related cyclopropane chemistry, 2167
- cinchon-, method to obtain phosphinites and their use in Rh-catalysed enantioselective hydroxylation of ketones, 3235
- conessine, oxidative demethylation with N-bromosuccinimide, 359
- coniomitine series, synthetic and structural studies, new reductive cyclisation in the indole field, 4563
- cyclopeptide model studies, 6067
- dimeric opium-, structure and absolute stereochemistry of somniferine and its O-methyl ether, 3115
- diterpenoid-, 4 new from *Aconitum palmatum*, 1875
- eliatin from marine truncate *Eudistoma* sp., 6655
- ergoline, tricyclic nitro synthon, entry into via asymmetric synthesis, 4543
- ergolines, lithiated, electro-

- phile substitution, 6425
 eudistomin K, crystal structure and absolute stereochemistry, 4971
 gelsemine, synthetic study, new synthesis of highly functionalised *cis*-hydroisoquinolines, 3781
 gelsemine, synthetic study, prep of advanced pentacyclic intermediate, 3785
 indole-, approach via intramolecular radical cyclisation, 45
 indole-, from *Aristolotelia fruticosa*, isolation and structure of aristofruticosine, 3355
 indole-, new class, elegansamine constructed from monoterpene indole alkaloid and an iridoid, 5395
 indole-, yuehchukene, regio- and stereocontrolled synthesis, 2993
 indole-diterpene tremorgenic-, construction via tricyclic ketone synthesis, 2787
 (+)-integerrinic acid lactone from R-(+)- β -citronellol, synthesis, 2139
 isamine, phenanthridines, phenanthridinones and biphenyl alkaloid, regioselective synthesis, directed metallation connection to aryl-aryl cross coupling, 5463
 isoquinoline-, regioselective synthesis, use of arylsilanes in directed Pictet-Spengler cyclisations, 6715
 lindenialine and lindenamine, new from *Lindenia austro-calendonica*, 615
 lycocotinine-type C-19 diterpenoid-, with C-6 α oxygenfunction, structure of pubescenine, 2723
 (\pm)-lysergic acid, concise Pd-catalysed approach, 3117
 metabolites of *Eudistoma* sp., segoline A, isosegoline A and nor-segoline, 3861
 monocrotaline, optically active, a carcinogenic pyrrolizidine alkaloid with 11-membered dilactone, synthesis, 5139
 (\pm)-N-acetylcolchinal, total synthesis, 4839
 new mazamine-, from *Xestospongia* genus, 3083
 one-step enzymatic synthesis of dihydrosanguinarine from protopine, 5625
 (-)-paspaline, stereocontrolled second generation synthesis, 2791
 pentacyclic aromatic-, acididemic from *Didemnum* sp, anticarcinogenic activity, 1177
 phenanthroindolizidine-, tylophorine, biosynthesis, implication of phenylacet-aldehydes, 807
 polyhydroxylated-, 1-deoxyjirimycin and 1-deoxymannojirimycin, synthesis via combined chemical and enzymatic procedure, 4645
 protoberberines, approach to and synthesis of 8-oxy-pseudopalmatine via intermolecular benzene cycloaddition, 2491
 (-)-protoemetinol, enantio-controlled synthesis, 4963
 (+)-pumiliotoxin A, total synthesis via reductive iminium ion-alkyne cyclisation, 901
 pyranocarbazole-, photo-rearrangements, 6625
 pyrrolizidine-, 3,5-disubstituted, synthesis via CN(R,S) method, 1391
 R-laudanosine and 9-R-O-methylflavinantine, syntheses by asymmetric alkylation, 301
 Soelerium-, O-methyljoubertamine, synthesis of 4-alkyl-4-14-methoxyphenyl)cyclohex-2-en-1-ones, 5483
 secoxyloganin aglucone, protected form, synthesis, 3511
 spirocyclic (\pm)-nitramine, stereocontrolled synthesis, 6493
Strychnos indole-, tubifoline, synthesis and NMR data, 6373
 (-)-supinidine, asymmetric total synthesis via diastereoselective alkylation of chiral tin enolates onto cyclic acyliminium species, 6133
 swainsonine in *Astragalus oxyphus*, biosynthesis, 4815
 (\pm)-tetraopenerine-8, stereoselective synthesis, 1691
 tricyclic nitro ergoline synthon, asymmetric synthesis, 3667
 (-)-tylophorine, asymmetric synthesis via enantioselective intramolecular double bond Michael reaction, 4135
- Alkanes**
 3,6-dimethyloctane, photosensitised oxidation, 1923
 functionalised noralkanes, via new degradation of carboxylic acids, acylcobalt salophen intermediates, 707
 oxidation to alcohols and ketones via biomimetic electrochemical system using manganese tetraphenylporphyrin chloride and imidazole as catalysts and acetic acid as proton donor, 205
 stabilised trimethylenemethanes and γ -aromatic dication, 6921
 trimethylenemethanes in which the triplet character of parent compd and ring closure to methylenecyclopropanes are both prevented, 6921
- Alkyl halides**
 alkyl bromides and carboxylic anhydrides, vitamin B-12 photoelectrocatalysed addition to methyl 2-acetamidocrylate yields 2-amino esters, 1601
 alkyl fluorides, new synthesis, 6851
 alkyl halides, aldehydes and acid halides, presence in reduction of nitrobenzene to aniline, 5083
 alkyl halides, and trialkyl phosphite, new addition to nitroene, prep of N-substituted 1-(alkoxyamino)alkyl-phosphonates, 663
 alkyl halides, reaction with alkoxides derived from oxiranylcannabinols, cine O-alkylation of oxiranylcannabinols, 705
 alkyl iodides, methyl vinyl ketone and carbonyl compds, Et₃B-mediated Reformatsky-type coupling, 1041
 alkyl iodides, photocarbonylation in presence of metal carbonyls, 3833
 alkyl iodides, reduction by LAH supports polar S_N2 mechanism, a quantitative analysis of "mechanistic probe" studies, 3451
 allyl bromide, Barbier-type allylation of acetals in Pb/Al bimetal redox system, 1721
 bromotrifluoromethanes, reactions with acid derivs in presence of Zn, 1029
- epoxyalkyl bromides and activated Cu, intramolecular cyclisations, direct formation of epoxyalkylcopper reagent, 6753
 ethyl, butyl and cyclohexyl iodide and ether and THF, rate constants for reaction with octyl radical, mechanistic probe studies, 3449
 fluoroalkyl iodides, samarium iodide initiated addition of olefins, 5129
 fluorotrichloromethane, dehalogenation with reduced titanium, generation of chlorofluorocarbene, new synthesis of 1-chloro-1-fluorocyclopropanes, 6749
 fluoride-catalysed aldol reaction on enol silyl ethers, stereochemistry, another non-chelate transition state, 2207
 mono- or dichloromethyl radical, stereoselective synthesis of 2,4-*cis* and 2,4-*trans* tetrahydrofuran derivs, 321
 n-propyl iodide and tetrabutylammonium bromide, ion pair aggregates, nucleophilic activity increases with aggregation number, 2201
 organic-, conversion by CO into aldehydes using electroreduced Fe(CO)₅, 6441
 organic-, electrochemical cross coupling, trichloromethylation and related synthesis of gem-dichloro compds, 1699
 racemic sec alkyl halides on solid support, alkylation of chiral acetoacetates, stereoselectivity, 4615
 racemic sec alkyl halides on solid support, alkylation of chiral acetoacetates, stereoselectivity, 4615
 radical reactions with (2-trimethylsilylallyl)triphenylstannane, a neutral acetone enolate equivalent, 6969
 tertiary alkyl halides, carbonylation, synthesis of pivaloyl halides, 4569
 tertiary alkyl halides, carbonylation, synthesis of pivaloyl halides, 4569
 t-butyl bromide, mono and double carbonylations mediated by SnCp₂, 6097
trans- and *cis*-1-fluoro-2-bromocyclopropanes, synthesis and acetolysis, relative *trans/cis* ratio 19 at 100°, 53
 trifluoromethyl group, effect on methylenecyclopropane rearrangement, 6839
- Alkenes see also Olefins**
 1-acetoxy-2-methylene-6-heptenes, Pd-catalysed cyclisations consistent with allyl-Pd/olefin insertion involving metal transfer to distal alkene terminal, 5529
 1-ethoxy-3-trimethylsilyl-1-propene, reaction with aliphatic aldehydes and acetals in presence of TiCl₄ to give 2-formyl allyltrimethyl silanes and 2-formyl-3-alkoxyalkyl-trimethylsilanes, 4717
 1,1-bis(trimethylsilyl)ethylene, dimerisation to 1,1,4,4-tetrakis(trimethylsilyl)butane-1,4-diyl dianion a reagent for Peterson reaction, 6939
 1,2-borostannyl-1-, regioselective synthesis and cross coupling, 261
 2-oxazolines from-, induced by amidotellurinylation, 1049

(9E)-1-trimethylsilyl-1-, prep via trimethylsilyldiazomethane reagent, 6295
 and alcohols, photoaddition to sodium phthalimide, 1071
 and alkynes, conversion into one-carbon homologated aldehydes via hydrozirconation-isocyanide insertion-hydrolysis, 1631
 and alkynes, Ni-catalysed intramolecular allylation coupled with β -elimination or carbonylation, 6433
 and ketenimium ions, [2+2] cycloadditions, stereoselective synthesis of substituted cyclobutylamines, 4309
 and vinylcyclopropanes, synthesis of vinylcyclopentanes promoted by benzenethiyl radical, 5135
 asymmetric ene reaction with prochiral aldehydes catalysed by organo-Al reagent, 3967
 bicyclic and polycyclic-, via Pd-catalysed intramolecular arylation and vinylation, 2919
 cyclic and acyclic-, oxidation to oxiranes or vicinal epoxy alcohols, 2967
 cyclopropanes, reaction with oxadiazoles, route to γ -pyrans, 3231
 di- and tri-substituted-, synthesis via carboboration of 1-alkynes, 1811
 electrophilic-, and alkynes, reaction with acetylene-dicarboxaldehyde monoacetal to give Diels-Alder and pseudo-Michael addition substitutions, 1025
 electrophilic anti-addition of methanesulphenyl fluoride, synthesis of β -fluoroalkyl-methylthio ethers, 2311
 epoxidation using Ni complexes of chiral cyclams, 877
 ethylene and butadiene, transition state of Diels-Alder reaction, perturbational evaluation, 4699
 exocyclic-, synthesis via doubly lithiated allyl sulphones, new route to optically active carba-prostacyclins, 781
 free radical addition of 1-thiosugars, new approach to synthesis of 1-thioglycosides, 4293
 in presence in presence of other functional groups, selective hydrogenation via complex of Pd and salicylidene ethylene diamine, 5545
 intramolecular cycloadditions with arylketenes, reactions of 5-arylbicyclo[3.2.0]heptan-6-ones, 3175
 non-activated, intramolecular isomuncnone cycloaddition, 1677
 oxide of vinyl 2-furan, styrene and 1-butene, regiochemistry of reaction of halosilane, ^{13}C NMR, 3307
 oxychlorination of-, by chlorochromate reagents, prep of α -chloro ketones and competition by substituent-directed oxidation, 6707
 reactions with ArSCl_2 , MeCO_2H , Ag_2 , or HgCl_2 , correlations of IP's vs relative reactivities or formation constants, steric dependence of complexation reactions, 6207
 synthesis of γ -lactones using p-methoxybenzyl chloride as $+\text{CH}_2-\text{CO}$ -, equivalent, 6925
 synthesis of thiranes and desulphurisation, 4177
 trans-1,2-bis(tri-n-butylstanny)ethylene, Pd-

catalysed coupling with aromatic halides, synthesis of substituted trans- β -bromostyrenes, 2783
 trisubstituted-, stereoselective synthesis via Ni-catalysed coupling of Grignard reagents with 6-alkyl-3,4-dihydro-2H-pyrans, 2353
 via intermolecular [2+2] photocycloaddition of 2,5-cyclohexadiene-1-ones, 6881

Alkynyl halides

1-(p-ethoxyphenyl)vinyl bromide, photolysis and isolation of ipso adduct, vinylidene-cyclohexadiene, alcoholysis of which leads to vinyl ethers, 6141
 ω -hydroxy alkynyl iodides via hydroalumination of ω -terbutoxy alkynes, application to dienic insect pheromones, 6243
 addition of I₂ to alkynes on alumina, 35
 allyl chlorides, Pd-catalysed reaction with 2-alkynylanilines, formation of 3-allylindoles, 1799
 allyl halides and acetylene derivs, cyclocarbonylation mediated by Ni(CO)₄, improved two-step method, 5811
 allyl halides, Pd-catalysed coupling with CO and 2-silyl-4-stannylfuran, synthesis of monoalide and seco-monoalide, 1173
 allyl halides, reaction with trialkylstibine to form homoallylic alcohols, 1395
 allylic chlorides and silver fluoride, allylative ring opening of siloxycyclopropanes, prep of δ,ϵ -unsaturated ketones, 6137
 haloynes, regioselective synthesis from bromo[3]cumulenes, 411
 perchlorobutyne, reaction with methanimines to give N-alkylideneammines, 5355
 perfluorocycloalkenes, electropolymerisation, 1295
 unsaturated dihalide, cycloaddition of two mols with two dioxophosphidure dianions to give unsaturated macrocyclic phosphine tetraoxides, 6247
 vinylic halides or triflates, Pd-catalysed coupling of unsaturated carboxylic acids, synthesis of vinylic lactones, 6399
 vinyl bromides, [E]- and [Z]-1,2-disubstituted, stereospecific synthesis based on conversion of [E]-2-(1-substituted-1-alkenyl)-1,3,2-dioxaborinanes into isomeric [Z]-compd, 21
 vinyl iodide-ethynylstannane coupling, Pd-catalysed, terbinafine synthesis, 1509

Alkoxides

anhydrous-, ring opening of N-aryl-2-oxazolidinones, prep of N-(alkoxyethyl)-2,6-disubstituted anilines, 5095
 derived from oxiranyloarbinols, reaction with alkyl halides, cine O-alkylation of oxiranyloarbinols, 705
 diamine zinc(II)mono-, mediated conjugate additions of Grignard reagents to α,β -unsaturated ketones 3593

Allosteric

synthetic device, torsional entropy as co-operator, 5021

Alkylation

α -alkylated α -amino acids, asymmetric synthesis via Schmidt rearrangement of α,α -bisalkylated β -keto esters, 403
 α -amido-, acyclic stereoselection, 1891
 β -, of α,β -unsaturated aldehydes; β -dicarbonyl compds via Co(II)-chloride bistrisphenylphosphine, 1469
 β -hydroxy-, and β -conjugate addition of enones, new method, 5413
 allylic C-, Pd-catalysed, of heterocyclic β -dicarbonyl triacetic acid lactone and tetrionic acid, 581
 amines using trivalent bismuth deriva, 857
 and generation of 1-bromoalkenylzincate, 3821
 asymmetric-, of chiral oxazolo-[2,3a]tetrahydroisoquinoline and synthesis of (S)-(-)- and (R)-(+)-salsolidines, 6949
 asymmetric-, syntheses of R-laudanosine and 9-R-O-methylflavinantine, 301
 bifunctional allylic alkylating agent, use in Pd-catalysed annulation, 5663
 C-5 methylation of caffeine controlled by benzyloxy radical addition at C-8, 2055
 C-, and O-acylation of benzoicacetonitrile mediated by Hung's base- MgCl_2 , 3437
 chemoselective carbonyl-, and reduction of aldehydes or ketones, 3101
 chiral acetoacetates by racemic sec alkyl halides on solid support, stereoselectivity, 4615
 chiral propionamide enolates with epoxides, reversal of predicted facial selectivity, 4245
 cine O-, of oxiranyloarbinols via reaction of alkoxides derived from oxiranyloarbinols with alkyl halides, 705
 diastereoselective-, of chiral tin enolates onto cyclic acyliminium species, asymmetric total synthesis of (-)-supinidine, 6133
 diastereoselective-, of vinylogous urethanes derived from simple tetrionic acids, 1489
 diethyl aminomethylphosphonate Schiff bases, prep of γ,δ -unsaturated α -aminophosphonic acids, 4559
 enolate-, of bicyclo[2.2.2]oct-5-en-2-one and radical cyclisation, prep of tricyclic carbocycles, 5789
 enolate-, of norbornenones, 3351
 homoallylic alcohols from (Z)-1,4-di(2-tetrahydropranyloxy)-but-2-ene and Grignard reagents, 4-carbon homologation, 3373
 intramolecular-, approach to substituted cyclopentanones, acid catalysed ring opening of α -bis(methylthio)methylenealkyl cyclopropyl ketones, 2111
 methylation and hydroxymethylation involving free radicals, application to stereoselective construction of 20(S)-steroid side chain, 4001
 N-, of compds with multiple benzimidazole functionalities, 3033
 N-, of thioamides, 1755
 N-methylation of diazocoronands, application of ultrasound, 959
 new acylmethylation of aromatic compds via conjugated nitro olefins, 2977

- pentacoordinate organosilicate as agent, Pd-catalysed methylation of aryl halides, use of 97
- pentane-2,4-dione, dual mechanistic pathway via its Co(II) complex, 1465
- reductive-, and metal-ammonia reduction of naphthalenesulphonamides, new route to substituted naphthalenes, 4473
- regiocontrolled-, of vinyl epoxides, tin mediated and Pd-catalysed, 2931
- silyl ketene acetals with dienyliron complexes, application to formation of quaternary C-centers, 869
- stereoselective-, of chiral glycine enolate synthons, enantioselective synthesis of α -amino acid derivs, 6079
- stereoselective-, of chiral imide enolates to give optically active α -alkylsuccinates, 6257
- tetra- and penta-alkylated cyclopentadienyl ketones and carboxylic acids, prep, 5641
- trichloromethylation and related synthesis of gem-dichloro compds via electrochemical cross coupling of organic halides, 1699
- Alkylidenation**
of silyl esters, regio- and stereo-selective prep silyl enol ethers, 1065
- Alkynes**
1-, carboboration, application to synthesis of di- and tri-substituted alkenes, 1811
- 1-, carbocupration by branched alkyl heterocuprates (RCuMgX), in presence of excess MgBr₂, 4313
- 1-ethoxy-3-trimethylsilyl-1-propyne, reaction with α -haloketones to give dienic conjugated esters, 3065
- 1-hexyne, reaction with aryl chromium carbene complexes, formation of unusual Diels-Alder cycloaddition products, 2513
- 1,7-octenyne, intramolecular ene reaction, 1,2-cyclooctadiene intermediate, 407
- 3,3,3-triethoxypropyne added to series of 1,3-dienes to yield 4 π + 2 π products of formal addition of ethyl propiolate to 1,3--dienes, 3407
- 10-membered cyclodienes with one or two hetero atoms, synthesis and properties, 4529
- ω -terbutoxy-, hydroalumination, access to ω -hydroxy alkenyl iodides, application to dienic insect pheromones, 6243
- acetylene and diaacetylene, Pd-catalysed Cadiot-Chodkiewicz coupling with 1-halogenallenes to give 1,2,6,7-octatetraene-4-ine, 1,2,8,9-decatetraene-4,6-diene and 2,4,6-octatriene, 3651
- acetylene derivs and allyl halides, cycloalkylation mediated by Ni(CO)₂, improved two-step method, 5811
- acetylene, intramolecular insertion of-, in situ generation of non-stabilised carbene complexes, new two-alkyne annulation and new prep of γ -keto esters, 415
- acetylenes, intramolecular addition of alkoxythiocarbonyl free radicals, synthesis of lactones, 6127
- acetylenes, intramolecular hydrosilation, regioselective functionalisation of homopropargyl alcohols, 6955
- acetylenic epichlorohydrins and sodium telluride, prep of 2-substituted 4-hydroxymethyl-tellurophenes, 4923
- addition of I₂, synthesis of diiodoalkenes, 35
- and alkenes, conversion into one-carbon homologated aldehydes via hydrozirconation-isocyanide insertion-hydrolysis, 1631
- and alkenes, Ni-catalysed intramolecular allylation coupled with β -elimination or carbonylation, 6433
- cycloadditions with free singlet dimethylgermyleneMe₂Ge, 5245
- diacetylenes, medium-sized carbocyclic, synthesis and properties, 2813
- diacetylenic analogs, synthesis from LTA, methyl ester, 3073
- dienophiles, Diels-Alder reaction with 1,3^a-azaarsinines to give 1^a-arsinines, 539
- diphenylacetylene and epoxypropyne, reaction with hydroxy (and trimethylsiloxy)-phenylethynylketene, 2765
- diphenylacetylene, trans-acetoxymercuration, 4631
- electrophilic-, and alkenes, reaction with acetylenedi-carboxaldehyde monoacetal to give Diels-Alder and pseudo-Michael addition substitutions, 1025
- in presence of alkenes and alkenes,, selective hydrogenation via complex of Pd and salicylidene ethylene diamine, 5545
- oxidation catalysed by CrO₃, to conjugated acetylenic ketones with *t*-butyl hydroperoxide 2321
- Pauson cycloaddition, steric control, dicobalthexacarbonyl complexes if internal alkynes, reaction with olefins to give cyclopentenones, 999
- Pd-catalysed hydrostannation of-, and hydrostannolysis of propargyl or propargyloxy carbonyl derivs of functional groups, 619
- phenyl(tolylsulphonyl)acetylene, reaction with dienes and homo-dienes, cycloaddition vs fragmentation-addition, 831
- propyne, ruthenium catalysed addition to N-protected amino acids, regioselective synthesis of isopropenyl esters, 5365
- reaction with furan chromium carbene complexes, synthesis of cyclopentanones, 3403
- related dienyne of 1 α ,25-dihydroxyvitamin D₃, Pd-catalysed synthesis, 1203
- synthesis of β -keto phenyl sulphides, 2381
- trialkylsilyloxy-, synthesis and aromatic annulation, 4917
- Z-dithiohex-3-ene-1,5-diyne, generation and carbonyl additions, 4681
- Alkynylation**
new amido-, using alkynylzinc reagent, application to α -thiolactams, 5391
- Allenes**
1,3-diphospha-, cyclisation, formation of 1,2,3,4-tetrahydro-1-phosphanaphthalene, 333
- allene oxide, cyclopentenone formation, 5613
- allyl alcohols, dimethyl-dioxirane oxidation yields functionalised tetrahydrofuran and tetrahydropyran derivs via intramolecular nucleophilic addition of OH group to intermediate allene diepoxide, 4791
- allyl and allylcarbonyl groups in phosphate chemistry, Pd-catalysed selective deprotection in presence of propargyl and propargyloxy carbonyl groups, 623
- 'allyl'-functionalised cellulose disc supports, simultaneous multiple synthesis of protected peptide fragments, 5871
- carbopalladation, synthesis of silylated 1,3-dienes, 627
- equivalent, use of 2,3-(diphenylsulphonyl)-1-propene in cycloaddition, 265
- silyl-cupration of-, new route to silylated synthons, 1825
- trimethylsilyl-, via low pressure flow pyrolysis of trimethylsilylpropargyl ethers, 6
- Allylation**
asymmetric intramolecular-, Pd-catalysed, forming optically active vinylcyclopropane and vinylidihydrofurans, 669
- asymmetric-, of aldehydes with optically active allylsiliconates, stereochemistry and mechanism, 5667
- Barbier-type-, of acetals with allyl bromide in Pb/Al bimetal redox system, 1721
- carbonyl-, by allylic carbonates using PdCl₂(PhCN)₂-SnCl₄ system, diastereoselectivity, 3563
- intramolecular olefin-, Pd-catalysed, synthesis of N- or O-containing ring systems, 4709
- intramolecular olefin-, stereocontrolled syntheses and evidence for allylpd/olefin-cis-insertion in bicyclic systems, 4705
- intramolecular-, Ni-catalysed, of alkenes and alkynes coupled with β -elimination or carbonylation, 6433
- new-, of aromatic compds from allyltrimethylsilane using iodolylbenzene and BF₃OEt₂, 667
- regioselective-, of α -isocyanate esters at a carbon, Claisen rearrangement of allylic α -isocyanate esters, 5151
- Sn²⁺- and Sn²⁺-regioselective-, of organo-Zn reagents, Cu and Ni catalysed, 5155
- Aluminum compounds**
AlCl₃, presence in reaction of allylsilanes with phenylthioacetals, 6175
- [Al(Hg)] or DDQ, cleavage of glycosidic bond of amphotericin B, 447
- alumina, use in addition of I₂ to alkynes, synthesis of diiodoalkenes, 35
- amalgam of-, selective reduction of cycloalkanone, 525
- chiral organo reagent, catalysis of asymmetric ene reaction, 3967
- hydroalumination of ω -terbutoxy alkynes, access to ω -hydroxy alkenyl iodides, application to dienic insect pheromones, 6243
- organo reagent, new synthesis of carboxylic acid hydrazides, 739
- organo reagent, use in new synthesis of C₁₀-juvenile hormone via kinetic resolution of epoxides, 1417

- trimethylaluminum, regioselective formation of 3-t-alkoxy-1,2-glycols from 2,3-O-alkyldienetriols, 1823
- triiodide of-, reagent, deoxygenation of oxiranes, 5815
- Amides**
- 2-lithioethylamine equivalent, prep of N-lithio-N-(2-lithioethyl)benzamide, 2859
- 3-methylene cyclopentanecarboxylic-, via asymmetric Ni-catalysed [3+2] cycloaddition of (-)-camphorsultam acrylate with methylenecyclopropane or 2,2-dimethylmethylenecyclopropane 529
- α -isocyanacetamides, asymmetric aldol reaction with aldehydes catalysed by chiral ferrocenylphosphine-gold complex, 6321
- and ester derivs of metaphosphoric acid, generation via photolysis of 2,3-oxaphospha-bicyclo[2.2.2]oct-5-ene derivs, 2627
- bond surrogates, alternate synthesis of LEU-ASP trans C-C bond isomers of CCK, 4041
- ceramide derivs, stereoselective glycosylation, approach via use of pivaloyl group as stereocontrolling auxiliary, 4097
- chemoselective hydrolysis of-, by tetrahydrophthalic anhydride, 6553
- chiral-, simple prep, 6973
- conjugated isobutylamides, stereoselective synthesis via arsonium salts, new synthesis of pellitorine, 3949
- formation via imines from β -elimination with N,N-cleavage of hydrazine-N-oxides, 1909
- lithium diisopropylamide as hydride donor, reduction of aldehydes, 4057
- O-allyl benzamides, cyclisation, sonochemically generated radical anions, 2183
- prim-, selective synthesis of nitriles, 2155
- Amidines**
- allyl-, and -ureas, iodocyclisations to give imidazolines and imidazolinones, 3001
- Amination**
- allylic-, of alkenes by tosyliminoiodobenzene, manganese porphyrins as catalyst, 1927
- electrophilic-, enantioselective synthesis of D-allothreonine and L-threonine, 6765
- selective-, of allylic alcohols via intramolecular amidomercuriation, 3789
- Amines**
- 2-alkylanilines, Pd-catalysed reaction with allylchlorides, formation of 3-allylindoles, 1799
- 2-lithioethylamine equivalent, prep of N-lithio-N-(2-lithioethyl)benzamide, 2859
- 5-aminoisoxazoles, conversion to amino acid bis-amides, 6067
- α -amino radicals via dissolving metal reduction of ω -unsaturated iminium salts with samarium diiodide in presence of camphorsulphonic acid, 6685
- α -heteroaryl sec-, synthesis by variation of Brulants reaction, 6827
- β -phenethylamines, metallation, regioselective synthesis of alkylation using trivalent bismuth derivs, 857
- allyl-, synthesis of α , β -butyrolactams, 4859
- allyl-, via conversion of allyleilanes by phenyl-tellurinylation, 4949
- aminals and aminol ethers activated with acetyl chloride or sulphur dioxide, use in Mannich reactions using N-methylpyrrole, 2997
- and amino-phosphonium salts via reaction of lithiated aza-ylide with alkyl and acyl halides, 3931
- anilines, N-(alkoxyethyl)-2,6-disubstituted, prep via ring opening of N-aryl-2-oxazolidinones by anhydrous alkoxide, 5095
- aromatic-, oxidation in presence of "electron rich" aromatic systems, 4501
- aryloxy and alkoxypropanol-, β -adrenergic blocking agents, route to via TiCl₄ induced ring opening of chiral acetals, 2955
- benzylamine derivs, ortho-selective metallation and electrophilic substitution, 4277
- benzylideneanilines, cycloaddition with 3,4-dihydro-2H-pyran, 3585
- by stereospecific conversion of nitro alkanes via transfer hydrogenation, 5733
- C₂ symmetric chiral diamine, use with osmium tetroxide in asymmetric *cis*-dihydroxylation of olefins, mechanistic aspects, 573
- catalytic amount of-, effect on selective epoxidation of aliphatic and aromatic olefins with t-butyl hydroperoxide and a molybdenum oxide chelate, 2843
- conjugate addition to chiral (E) and (Z) vinyl sulphoxides, enantioconvergent and kinetic process, 2089
- cyclic sec-, oxidative decarboxylation and dehydrogenation with iodobenzene, prep of cyclic amino acids, 6917
- cyclobutylamine, substituted, stereoselective synthesis via [2+2] cycloadditions of ketenium ions and alkenes, 4309
- employed as base, effect on stereoselectivity of directed aldol reactions of 3-nitro-2-methoxybenzaldehydes, 2247
- enantiomeric-, via asymmetric reduction of ketoxime ethers, distinction between *anti* and *syn* isomers, 223
- exposed amino, azido, bromo or cyano groups in functionalised siloxy-anchored monolayers, 5593
- hypervalent iodine oxidation using iodobenzene, synthesis of nitriles, ketones and lactams, 6913
- Knoevenagel condensation under heterogeneous catalysis, silica gel functionalised with amino groups as a new catalyst, 2261
- mild oxidation to aldehydes and ketones, 6701
- N,N-dialkyl-2,4-bis(trifluoroacetyl)-1-naphthylamines, acid catalysed cyclisation to naphtho[1,2-d][1,3]oxazines, 4599
- N,N-dimethyl-2,2-diphenylethylamine, photolysis in MeOH, C-C bond heterolytic cleavage, 431
- N,N-dimethyl-p-anisidine, set oxidation, N,N,N-dimethyl-p-N-(4-methoxyphenyl)-1,4-phenylenediamine identified by ESR, 2463
- new macrocyclic triamine, (S)-2-hydroxymethyl-1,6,11-triazacyclopentadecane, synthesis from ornithine and complexation of its conjugate with ATP, 6231
- nucleophilic conjugate addition to 2-hydroxyalkylpropanoates, diastereoselection, 949
- olefinic-, regioselective hydrocarboxylations, characterisation of key intermediate, 6421
- oligodeoxyribonucleotides containing 5'-aminoalkylphosphonates, synthesis, 5537
- selective acylation of-, new reagents for, 2741
- tributylamine, and tributylammonium formate reaction with alkyl 4-hydroxy-2-alkanoates and 4-hydroxy-2-alkan-1-ones, prep of 1,4-dicarbonyl compds, 1457
- polycyclic phenylethanolamine, synthesis via arylidene condensation of ketone enolates, 1385
- prim-, and aminolminomethanesulphonic acid, prep of mono-substituted guanidines, 3183
- prim-, reaction with alkyl α -H-perfluoroesters gives β -iminoester or tautomer depending on length of perfluoroalkyl chain, 3683
- R,R,N,N-dimethyl 1,2-diphenylethylene diamine, optical resolution, 2679
- sec allylamine and N-allylhydroxylamines, synthesis via Pd-catalysed hydroxyamination of allyl esters, 2973
- sec-, conversion to nitroxides via dimethyldioxirane, 4677
- sec-, catalytic dehydrogenation with cobalt Schiff base complex-oxygen system, 4115
- sec-, syntheses of β -amino ketones and β -amino acid esters via oxidative ring opening of isoxazolidines, 5949
- sec-alkyl primary-, oxidative deamination with 3,5-di-t-butyl-1,2-benzoquinone, 1H NMR of spontaneous rearrangement, 851
- tris(2-aminoethyl)amine, cyclic [2+3] Schiff-base condensation with dicarbonyls to new series of cage molecules, 385
- vicinal diamines via dimerisation of imines in a Pb/Al bimetal redox system, 3811
- Amine halogen derivatives**
- 1-[2',5'-dimethoxy-4'-(β -fluoroethyl)phenyl]-2-aminopropane; studies related to ¹⁴F-labelled serotonin receptor ligands, 6537
- 2,2-bis(dimethylamino)biphenyl and its monohydrobromide, structures, 5629
- (\pm)-chlorphenoxamine and (\pm)- α -bisabolols, synthesis via use of Organo-Mn reagent, 3659
- N-chlorodialkylamines, chlorination of phenols in presence of silica, 1319
- primary 2-bromoallylamine, Pd-catalysed cyclocarbonylation, application to synthesis of E- and Z-3-(hydroxyisopropylidene)azetid-2-ones, precursors to new monocyclic β -lactam antibiotics, 5601

Amino acids

2-aminoethylphosphonic acid and its methyl substituted derivs and primary OH group of β -D-galactopyranoside, formation of an ester bond, 1199
 2-hydroxymethyl-1-amino-1-cyclopropane carboxylic acid, enantiomerically pure via CN(R,S) method, 3315
 (4R)-4-[*(E)*-2-butenyl]-4,N-dimethyl-L-threonine, stereoselective synthesis, 2069
 α -alkylated α -, asymmetric synthesis via Schmidt rearrangement of α,α -bis-alkylated β -keto esters, 403
 α -allyl- α -, synthesis via Pd-catalysed intramolecular rearrangement, 4981
 α -, α -phosphorylated, synthesis, 4465
 α -, and N-Boc- α -amino alcohols, stereoselective synthesis, 1265
 α -, asymmetric synthesis, comparison of enolate vs cation functionalisation of N-Boc-5,6-diphenyl-2,3,5,6-tetrahydro-4H-1,4-oxazin-2-ones, 6075
 α -, Cu-mediated selective transport across bulk lipid membrane using chiral lipophilic ligand as carrier, 4967
 α -, derivs, addition to conjugated aldehydes, synthesis of β -substituted serines, 3109
 α -, derivs and 3-hydroxyethyl- β -lactams, new approach via azetidene-2,3-diones, 3133
 α -, derivs, enantioselective synthesis, stereoselective alkylation of chiral glycine enolate synthons, 6079
 α -, N-carboxyanhydrides, prep using bis(tri-chloromethyl)carbonate, 5859
 α -, optically active, incorporated into iron acyls, synthesis, 4273
 α -, oxidations under Mitsunobu reaction conditions, 4661
 β -, β -lactam formation via oxazolone-derived reagents, 2203
 β - and γ -, hydrocyanation route, synthesis of α -methylene- β -alanine, 1983
 β^{δ} -, new synthesis via nucleophilic addition of enolate anions to N-methoxycarbonylimines of α -methoxy carbamates, 231
 β -hydroxytyrosines, new entry to synthesis via benzylic hydroxylations, 5177
 (-)-actinonin, asymmetric synthesis using iron chiral auxiliary, 6509
 bilirubin exo-vinyl N-acetyl-L-cysteine adducts, CD, amplification of optical activity by remote chiral functionality, 3507
 biosynthesis of mugineic acid and 2'-deoxymugineic acid in *Hordeum vulgare*, phytoisidophore study, 1053
 bis-amides of-, by conversion of 5-aminoisoxazoles, 6067
 bis-cysteine peptides, antiparallel and parallel dimers, synthesis, uteroglobin-like peptide cavities, 3845
 carbonyl-modified-, and peptides, synthesis of monofunctionalised enamines and methyl ketone derivs from thioamides via episulphides and thioiminium salts, 2295
 carbonyl-modified-, and peptides, synthesis of difunctionalised enamines from thioamides via

thioiminium salts, 2299
 D- α,ω -diaminoalkanoic acids, enantioselective synthesis, 2019
 D-allothreonine and L-threonine, enantioselective synthesis via electrophilic amination, 6765
 D-tyrosine or L-tyrosine, new synthesis of (-)-anisomycin or (+)-anisomyin, 4419
 glutamic acid analogs, conformationally rigid, chemoenzymatic synthesis, 6109
 glycine residues in dipeptides, selective modification, 1565
 hydrazoic acid and benzylamine, regioselective additions to 1-(arylsulphonyl)bicyclo[1,1,0]butanes, synthesis of *cis* and *trans* 2,7-methanoglutamic acids, 1591
 hydroxy-, moiety of Al-77-B, a gastroprotective compd from *Bacillus pumilus*, 6331
 isoserine, optically pure, enantioselective synthesis, 2189
 L-(3R and 3S)-(β -D-ribofuranosyl)-pyroglutamic acids, enantioselective synthesis and possible intermediates in C-nucleoside biosynthesis, 375
 L- α,γ -diaminobutyric acid and D-glutamic acid, dilactam, a 8-turn template, prep of derivs of 3(S)-amino-10(R)-carboxy-1,6-diaza-cyclodeca-2,7-dione, 5057
 L-glutamic acid, chiral synthesis of 5-hydroxy-L-pipecolic acids, 2231
 L-glutamic acid, chiroselective synthesis of (+)-PS-5, 4305
 L-ornithine and L-arginine, *trans*-3,4-didehydro analogs, synthesis, 6193
 L-phenylalanine, oxidation by modified Udenfriend system, 2177
 L-phenylalanine, synthesis of derived optically active dioxocyclam macrocycle, application to olefin oxidation, 5091
 lysine analog, chain shortened, spontaneous cyclisation, 3111
 N-diisopropylphosphoryl-serine and theonine in alcoholic media, phosphorylation-dephosphorylation processes, participation of NH_2 , OH and COOH groups, 1145
 N-protected-, ruthenium catalysed addition to propyne, regioselective synthesis of isopropenyl esters, 5365
 N-trityl L-homoserine lactone, assignment of chemical shift values, 4045
 ornithine, synthesis of new macrocyclic triamines, (S)-2-hydroxymethyl-1,6,11-triazacyclopentadecane and complexation of its conjugate with ATP, 6231
 p-aminophenylalanine in *seudomonas fluorescens*, biosynthesis of oharluorin, 6353
 prim and sec ω -, formation of 5- and 6-membered lactams promoted by Ti(O-1-Pr) $_2$, 3049
 protected α -dehydro- α -, new synthesis from substituted oxamic acid, 1919
 S-4-chlorotryptophan, synthesis via resolution, determination of absolute stereochemistry and identification in crude seed protein of *Pisum sativum*, 2339
 S-alkyl homocysteine derivs, prep, S-phosphonomethyl homocysteines as inhibitors of glutamine synthetase, 6055
 S-cysteinyl, S(N-acetylcysteinyl) and S-glutathionyl conjugates of N-hydroxymethyltriazenes, synthesis, 2707
 Schiff base anions of-, reactions

with electrophiles, role of initial stereochemistry, 2441
 spiro-benzopyran-, new synthesis by intramolecular amidoalkylation, 5493
 statine analogs, asymmetric synthesis, 2307
 statine and analogs, synthesis via homogeneous asymmetric hydrogenation, 6327
 syn- β -hydroxy- α -, new entry, 3125
 threo- β -hydroxyamino acids, by conversion of *trans*-5-alkyl-2-oxazoline-4-carboxamides, 6321
 threo- β -hydroxy- α -N-methyl amino acids and new analogs of cyclosporin amino acid, asymmetric synthesis via epoxides, 5205
 (+)-threo- γ -hydroxy- β -lysine lactone, stereoselective synthesis, 3793
 (+)-threo- and erythro- γ -hydroxyornithine, stereoselective synthesis, 1627
 threo and erythro β -phenylserines, new asymmetric synthesis using (+)-ketopinic acid as chiral auxiliary, 2067
 threo and erythro-sphingosines, asymmetric synthesis via asymmetric aldol reaction of α -isocyanacetate catalysed by chiral ferrocenylphosphine-gold complex, 239
 trans- and cis- α -(carboxycyclopropyl)glycines, synthesis as L-glutamate analogues with neurobiological activity, 1181
 tripeptide one-pot synthesis from three single amino acid derivs catalysed by papain, 2907
 vinyl glycines, 4-substituted, synthesis via phosphorane and phosphonate synthons, 3361

Amino alcohols

2-amino-1,4-diols, asymmetric synthesis, 1303
 2-amino-3-butenols, optically active, asymmetric synthesis via cyclisation of 2-butylene dicarbamates catalysed by chiral ferrocenylphosphine-Pd complex, 99
 α,γ -, diastereoselective synthesis via intramolecular 1,3-dipolar cycloaddition of nitrones with allylthioether groups and reductive cleavage with desulphurisation, 5755
 (+)- and (-)-*trans*-2-amino-cyclohexanol enantiomers via enzymatic hydrolysis of (\pm)-2-azidocyclohexanoates, 1903
 cis-2-aminoethanol equivalent, 2-benzoyloxynitroethylene, 1879
 N-Boc- α -, and α -amino acids stereoselective synthesis, 1265
 polycyclic phenylethanolamines, synthesis via arylc condensation of ketone enolates, 1385
 sphingosine, a protein kinase inhibitor, stereoselective synthesis, 3037

Amino aldehydes

α -, (4+2)-cycloaddition to 1-methoxybuta-1,3-diene, effect of N-protecting groups on asymmetric induction, 5975
 chiral α -, stereoselective cyanohydrin-forming reactions, 3295
 o-aminobenzaldehyde and pentacyclic bis(ketoester), sequential Friedlander condensations, 6681

Amino esters

- 2-, via vitamin B-12, photo-electrocatalysed addition of alkyl bromides and carboxylic anhydrides to methyl 2-acetamidoacrylate yields, 1601
- β -allylaminocarbonates, generation of of Kolbe radicals, intramolecular addition, prep of diastereomeric adducts of-, derived from new chiral porphyrin with C₂ symmetry, HPLC behaviour, 5271
- diethyl aminomalonate, prep of azemethine ylids, 6649
- heterocyclic α -dehydro- α -, new route, 1921
- N-protected α -, and imines, zinc enolates,
- N-t-butoxycarbonyl-L-pyrroglutamate monoenoate, regio- and diastereoselective hydroxylation to optically pure (4R)-hydroxypyroglutamate from which (-)-bulgecinine was synthesised, 329

Amino ketones

- β -, and δ -amino acid esters, syntheses from sec amines via oxidative ring opening of isoxazolines, 5949
- β -, new synthesis via Δ^+ -isoxazolines, 5917

Amino nitriles

- 2-[(benzylidene)amino]benzotrile and 2-(diphenylmethylene)-amino]benzotrile, regio-selective additions of Grignard and lithium reagents, 4265
- as enamine equivalent, use in cyanide promoted Michael reaction, 6831

Aminophosphines

- tertiary-, high yield synthesis by transamination, 6983

Amino sugars

- 1-fluoro-D-desosamine deriv, prep and its glycosidation via Cp₂HfCl₂-AgClO₄ as activator, 3571
- 2-deoxy-N-acetylneuraminic acids, synthesis of both epimers and their behaviour towards CMP-sialate synthetase-A, comparison with 2- β -methylketoside of N-acetylneuraminic acid, 3643
- 2,3-dideoxy-2,2-difluoro-3-amino sugars and 3,3-difluoro-2-azetidiones, synthesis via Reformatsky reaction of difluoroacetate with imine, 5291
- 4-epi-vancosamine, isolation and characterisation, 1223
- aminodeoxyhex-5-enopyranosides, Pd-promoted carbocyclisation, 6589
- antithrombin activating pentasaccharide, synthesis, a new heparin-like fragment with two 3-O-sulphated glucosamines, 803
- cytidine monophospho-sialic acids synthesis via four immobilised enzymes, 789
- galactosyl amine as chiral matrix, reversal of asymmetric induction in stereoselective Strecker synthesis, 4397
- mycinamicin IV and VII, total synthesis, application of new glycosidation reaction, 3575
- N-acetyl-N-nitrosoauraminic acid deriv, thermal rearrangement, synthesis of 3-deoxy-D-nonulosonic acid, 4449
- N-acetylneuraminic acid, stereoselective glycosylation

aided by a phenylthio substituent as stereocontrolling auxiliary, 3987

Ammonium salts

- ammonium formate as catalytic H-transfer agent, use in reduction of aldehydes and ketones to methylene derivs, 3741
- benzyltrimethylammonium tetrachloriodate, benzylic chlorination of alkylaromatic compds, 5783
- macrocyclic polycarboxylate-hydrophobic ammonium carriers, active transport of uranyl ion, 1153
- Pd tributylammonium formate and tributylamine, reactions with alkyl 4-hydroxy-2-alkynoates and 4-hydroxy-2-alkyn-1-ones, prep of 1,4-dicarbonyl compds, 1457
- tetrabutylammonium bromide with n-propyl iodide, ion pair aggregates, nucleophilic activity increases with aggregation number, 2201

Annulations

- [2+3]-, enantioselective synthesis of (-)-retigeranic acid, 3283
- [3+3]-, of 2-azaallyl anions, new synthesis of piperidines and pyridines, 4819
- [4+1]-, synthesis of 3-pyrrolines, 3041
- acetal stannanes, prep and use for synthesis of 6- and 7-membered rings, 685
- allylsilanes for one-pot prep of 6- and 7-membered rings, 689
- and synthesis of cyclopentane via intramolecular radical cyclisation of acetals, 897
- aromatic-, of trialkylsilyloxy-alkynes, 4917
- aza-Wittig reaction of iminophosphoranes with isocyanides, CO, or CS₂ to give functionalised 4(3H)-quinazolinones and benzimidazo[1,2-c]quinazolines, 3849
- boron-, synthesis of sesquiterpene pseudoguaianolide lactones confertin and helenalin, 521
- cyclopentanone-, cyclopentanones via use of 1-(2-ketoalkyl)cyclopropanols, 1243
- cyclopentanone formation via an allene oxide, 5613
- imidazolines, synthesis of imidazo[1,2-a]pyridones, 5005
- method of-, prep of fused bicyclic systems with allylic angular OH group, 4053
- new two-alkyne-, and new prep of γ -keto esters, in situ generation of non-stabilised carbene complexes via intramolecular acetylene insertion, 415
- Pd-catalysed-, using bifunctional allylic alkylating agent, 5663

Annulenes

- 2,5b,10b,11-tetramethyldihydropyreno[5.6-c]furan, furan-isoannulated [14]annulene with as strong a diamagnetic ring current as parent system, 3483
- oxygen-bridged aza[15]- and aza[17]annulene dicarboxylates, prep via intramolecular azide cyclisation, 219

Antibiotics

- 1-deoxymojirimycin and 1-deoxymannoirimycin, synthesis via combined chemical and enzymatic procedure, 4645
- [4.3.0]pyrazoliginones, potential

- antibacterial agents, 6569
- 5-deoxyanthracayolines, new analogs of daunomycin and adriamycin, 4629
- (+)-7-deoxynogarol and (+)-7-oxo-0-methylnogarol, total syntheses, 791
- 8-methyl benzonaphthopyrone-, aglycones gilvocaroin M, virenonycin M and albocarcin M, 2517
- 11-membered cytochalasin ring system, synthesis by modified Reformatsky cyclisation, 2291
- 19-dehydroamphoteronolide B, synthesis, 451
- 22,23-dioxygenated milbemycin, stereochemistry by NMR studies, 6645
- 28,29-bisnorkijanolid, synthesis, 6951
- β -lactam-, asymmetric synthesis, application of chiral α,β -epoxyimines in ketene-imine cycloadditions leading to homochiral 3-aminoazetidiones, 5065
- β -lactam-, new enantio- and diastereo-selective synthesis of 2-azetidiones as intermediates, 815
- A82846, isolation and characterisation of 4-epi-vancosamine, 1223
- aminopeptidase B inhibitor, total synthesis of OP4949-111, 559
- amphotericin B, C₁-C₂, building blocks, stereocontrolled synthesis using [2,3]Wittig rearrangement, 5747
- amphotericin B, degradation, cleavage of glycosidic bond with [Al(Hg)] or DDQ, 447
- (-)-anisomycin or (+)-anisomycin, new synthesis starting from D-tyrosine or L-tyrosine, 4419
- ANSA chain of streptovaricins, related acetals, group selective reduction, conformational and stereochemical analysis, 4085
- anthracayolines, solvolytic method for introduction of C-7 OH group, synthesis of (+)-daunomycinone, 4151
- anthramycin analog, dimeric, synthesis and DNA crosslinking, 5105
- antibacterial pyridonecarboxylic acid deriv, synthesis, use of Bu₃NF/THFbase/solvent couple, 1931
- antibiotic drugs, new strategy for synthesis of key intermediates via racemisation of 2-amino-1,3-propane diols, 5561
- anticapsin, new and stereoselective synthesis, 191
- antiviral (S)-N'-(3-hydroxy-2-phosphonylmethoxy)propylcytosine, synthesis, 5475
- avermectin B₂, enantiospecific synthesis of spiroketal position, 2923
- avermectins, stereospecific synthesis of α -L-oleandrosyl- α -L-oleandroside deriv, 1873
- avermectins, synthesis of C11-C28 subunit, 1197
- avermectins, synthesis of optically active hexahydrobenzofuran nucleus, 3415
- bis-des-hydroxy, bis-des-methoxy CC-1065, synthesis, DNA binding and biological activity, 131
- EMY-28100, Pd catalysis in new approach to construction of Z-propenyl side chain at C(3) of cephen nucleus, 6043
- C₁₂-C₂₅ subunit of zincophorin, synthesis via [2,3] Wittig rearrangement of tertiary allylic

- ethers, 6905
calicheamicin deoxyglycone model, synthesis by intramolecular acetylde cyclisation, 4217
cervinomycin, synthesis of ring ABCD, 3991
chromomycin A, biosynthesis, 5513
CI-920, synthesis of 5R,8R,9S,11R-dephosphorylated deriv, 753
(±)-clavam-2-carboxylic acid, total synthesis, 1609
cytochalasin, isoindolone, synthesis, allyl selenides from allyl silanes and PhSeSe+(CH₃)PhBF₄⁻, 2287
D-mycinoase, 8-selective glycosidation via combination of Cp₂MgCl₂-AgClO₄ for activation of glycosyl fluorides, 3567
D-mycinoase, total synthesis from isosorbic acid, 5723
deacetyl glykenins A, B and C from *Basidiomyces* sp. structures, 5287
diazquinomycin A and B, synthesis, first double Knorr cyclisation, 3545
ditromycin, structure, 1963
erythromycin A, convergent synthesis of Woodward's carbamate intermediate, 2223
erythromycin as a supramolecular receptor, 1119
erythronolide A segments, stereoselective synthesis based on acyclic stereocontrol, 2219
erythronolides, asymmetric synthesis of macrolide intermediate, 1461
first α-vinylidenepenam, benzyl esters, prep, 5053
goniodomin A, polyether macrolide from *Goniodoma pseudogoniaulax*, 1149
guanine derivs substituted in O-position by mitomycin C, synthesis, 4673
iron and zinc bleomycin, direct comparison of oxygen transfer, 6413
irumamycin, absolute structure of C₁-C₂, part, chiral synthesis of degradation product, 6449
key carbapenem precursor, route to 4-bromomethylcarbonylmethyl-2-azetidinone; regioselective formation of bromohydrins by reaction of epoxy-azetidiones with MgBr₂, 5197
macrolide insect pheromone, synthesis of ferrulactone, 6947
milbemycins, spiro ketal subunit, new stereocontrolled synthesis, 2819
milbemycins and 22,23-dihydro-avermectins, spiroketal subunit, enantioselective synthesis, 3657
monensin, biosynthesis, total synthesis of putative triene intermediate activated as capryloysteamine thiol ester, 6357
mycinamicin IV and VII, total synthesis, application of new glycosidation reaction, 3575
naphthyrindinomycin and quinocarcin, approach to 3,8-diazabicyclo[3.2.1]octane moiety via 1,3-dipolar cycloaddition of photo-generated azomethine ylides, 3525
(+)-negamycin, enantioselective synthesis, 2373
(+)-negamycin, synthesis from D-glucose, 4077
neocarzinostatin chromophore A, synthesis of parent carbocyclic subunit, DNA study, 909
neoxazolomycin, fused bicyclic lactam-lactone terminus, synthesis by novel dianion cyclocondensation, 2521
(-)-neplanocin A and (-)-aristeromycin, synthesis via application of dimethyl (R)₂S-2-(10-isobornylsulphonyl)maleate, chiral synthetic equivalent of dimethyl acetylenedicarboxylate, 6143
new monocyclic β-lactam-, E- and Z-3-(hydroxyiso-propylidene)azetidin-2-ones precursors, synthesis via application of Pd-catalysed cyclocarbonylation of primary 2-bromoallylamines, 5601
new nucleoside-, structure of capuramycin, 2343
obafuorin, biosynthesis from p-aminophenylalanine in *seudomonas fluorescens*, 6353
octahydronaphthalene subunit of kijanolid and tetronolide, stereoselective synthesis, 3541
oleandomycin, synthesis via intact glycone oleandolide, 3975
paramycin-607, C₁-C₁₁ portion, synthesis via stereoselective oxmercuration of γ-siloxallene and asteroespecific Mg-MeOH reduction, 5505
peptide nisin, total synthesis, 795
polyene macrolide nystatin A₁, OH groups in C-1 to C-10 fragment are all *syn*, 2827
polyether salinomycin, stereocontrolled synthesis, crucial role of 4-methoxybenzyl protecting group for OH functions, 5143
prep of 1-fluoro-D-desosamine deriv and its glycosidation via Cp₂HfCl₂-AgClO₄ as activator, 3571
pyrazolidinone antibacterial agents, synthesis of nuclear analogs, thioaldehydes in cycloadditions, 5061
(-)-pyrenophorin and (+)-dibenzomacrodilolides via optically active allene macrodilolide key intermediate, 6129
saicocanin studies, construction of *cis*-fused drimane unit and synthesis of isosaicocanin methyl ether, 6721
showdomycin analogs, synthesis via reaction of thallium nitrate with glycol benzyl ethers, 1841
showdomycin, synthesis via addition of olefins to ribofuranosyl radical, 351
showdomycin, synthesis via oxidative ring contraction of benzeneselenenate adducts of glycol ethers, 2711
spiroketals, synthesis, 3609
sulfomycin I and berninamycin A, structures, 1401
thienamycin, enantioselective synthesis of key intermediate by chemicoenzymatic approach, 1057
tirandamycin A, stereoselective synthesis of key intermediate, (±)-Ireland alcohol, 5285
tricyclic polyether fragments incorporating spiroacetal subunit, synthesis using directed bisepoxide cyclisation, 5301
tricyclo-macrolide FK-506, non-racemic synthesis of segments, 277,281
tunicamycin, new approach to higher sugar allylic alcohols, 1193
- Antigens**
dimeric Le^x antigen, 1111V*Fuc₂nLc₆Cer:pivaloyl auxiliary for stereocontrolled glycosylation, 5267
stage specific embryonic antigen-1 (SSEA-1) A glycoheptaosyl ceramide, synthesis, 4759
stage specific embryonic antigen-3 (SSEA-3), globopentaosyl ceramide, total synthesis, use of 2,4,6-trimethylbenzoyl group as a stereocontrolling auxiliary, 5681
- Antimony and compounds**
dibenz[c,f][1,5]azastibocene system, transannular bond formation between Sb and N atoms, formation of X-Sb-X and X-Sb-N⁺ hypervalent bond, 5401
trialkylstibine, presence in reaction of aldehydes with allyl halides to form homoallylic alcohols, 1395
tri-n-butylstibine, mediated reaction of trichloroacetone nitrile with aldehydes, synthesis of α,α-dichloro-β-hydroxynitriles, 5275
- Arenes**
1-acetoxy- and 1-chloro-2,3-diphenylindene, ozonolysis, selective formation of new solvent derived products, 3375
1-phenylindene, rearrangement to 3-phenylindene induced by (CH₃CN)₂Cr(CO)₂, 3489
alkylaromatic compds, benzylic chlorination via benzyl-trimethylammonium tetrachloroiodate, 5783
aromatic compds, α-thioalkylation, 1729
aromatic compds, Lewis acid promoted carbonylation by new reagent bis(carbamoyl) diselenides, 6121
aromatic compds, new acylmethylation via conjugated nitro olefins, 2977
aryne traps, use of vinylsilyl Grignard reagents, new route to (arylalkenyl)silanes, 885
benzyl ethers, fungal removal of O- and N-benzyl groups, 6393
(E)-4-stilbenols, oxygenation catalysed by cobalt a Schiff base chelates, 6629
indenes, substituted, reaction with 4-phenyl-1,2,4-triazoline-3,5-dione to give 1,2-addition products, 2769
microbial oxidation, prep of cellular secondary messenger myo-inositol-1,4,5-trisphosphate and related derivs from benzene, 5303
p-methoxy-trans-β-deuterostyrene oxide, mechanism of "spontaneous" reaction in aqueous soln, 293
styrene, oxygenation catalysed by cobalt Schiff base complex, asymmetric induction, 6309
trinitroanisole, reaction with 1,3-dicarbomethoxyacetone, X-ray structural analysis of product, 6757
via Ni catalysed ipso displacement of phenolic ethers by Grignard reagents 5553
- Aromatisation**
aromaticity, absolute hardness as a measure, 4843
cyclo- in Reformatsky reaction of α-oxoketene dithioacetals, regioselective synthesis of substituted 2-hydroxy-6-

- methylthiobenzoates, 497
 cyclo-, of α -oxoketene
 dithioacetals with 3-methyl-5-lithiomethylisoxazoles, new synthesis of substituted and annulated 1,2-benzisoxazoles, 501
 cyclo-, of α -oxoketene dithioacetals with lithiumacetoneitrile, route to 4-substituted and 4,5-annulated pyridines, 6633
 new-, of 1,2-cyclohexanediones, synthesis of 3-arylcatechols, 73
 new-, of ring-A steroids, synthesis of estrone, 79
- Arsenic and compounds**
 1,3^d-azaarsinines, Diels-Alder reaction with alkyne dienophiles to give 1^d-arsinines, 539
 4-hydroxy-1,3^d-azaarsole, 3-hydroxy-1,2,4^d-diazaphosphole and 3-hydroxy-1,2,4^d-dozaarsole, exist in phenolic OH-form, 3387
 β -hydroxyethyltriphenylarsonium bromide, reaction with aromatic aldehydes, synthesis of 2,3-epoxy-3-arylpropanol, 5295
 arsonium salts, stereoselective synthesis of conjugated isobutylamides, new synthesis of pellitorine, 3949
- Aryl halides**
 3-fluorobenzene and 2-alkylfurans, unexpected Diels-Alder cycloaddition, 6227
 aromatic halides, Pd-catalysed coupling with *trans*-1,2-bis(tri-*n*-butylstannyl)ethylene, synthesis of substituted *trans*- β -bromostyrenes, 2783
 aryl bromides, conversion to arylmethylphosphonates, 1513
 aryl halides, cross coupling, use of NiCl₂-bpy-KI, 545
 aryl halides, electroreduction, addition of generated aryl radicals to C-C bonds, 639
 aryl halides, Pd-catalysed methylation, use of pentacoordinate organosilicate as alkylating agent, 97
 aryl iodides, photoactivated reaction with 2-naphthoxide ions by S_N1 mechanism, 3429
 bis(carboxy)iodobenzenes, Hg-mediated synthesis, 2033
 iodosobenzene tetrafluoroborate, stable electrophilic hypervalent iodine reagent without nucleophilic ligands, 3717
 iodosobenzene, oxidation of amines, synthesis of ketones, nitriles and lactams, 6913
 iodosobenzene, oxidative decarboxylation and dehydrogenation of cyclic secondary amines, prep of cyclic amino acids, 6917
p-methoxybenzyl chloride as $\text{CH}_2\text{-CO}_2^-$ equivalent, use in synthesis of γ -lactones from alkenes, 6925
- Arylation**
 aryl radicals generated by electroreduction of aryl halides, addition to C-C bonds, 639
 Cu-catalysed phenylation of indoles by triphenylbismuth bis-trifluoroacetate, 1115
 intramolecular allylic-, of cycloalkenes, Pd-catalysed, 905
 intramolecular-, radical mediated, synthesis of steganone using tributyltin hydride/AIBN, 2987
 Pd-catalysed intramolecular-, and vinylation, synthesis of bicyclic and polycyclic alkenes, 2919
- Asymmetric induction**
 Diels-Alder cycloaddition of α -hydroxycyanoimino compounds, 6173
 effect of N-protecting groups, (4+2)-cycloaddition of 1-methoxybuta-1,3-diene to α -amino aldehydes, 5975
 in 1,7-ring closure of diene-conjugated diazo compounds, route to chiral 1H-2,3-benzodiazepines, 6361
 in oxygenation of styrene catalysed by cobalt Schiff base complex, 6309
 in [2,3]Wittig rearrangement of allylic ethers with chiral substituent, new entries to stereoselective control over three contiguous chiral centers, 4587
 "intramolecular" double-, conjugate addition of internal nucleophile to chiral vinyl sulphoxides with stereogenic center at allyl-C, 3121
 in mixed photoadditions employing α,β -unsaturated homochiral ketals, 2613
- Asymmetric reactions**
 1,3-dipolar cycloadditions to 5-methoxy-2[5H]-furanones, 5317
 [3+2] Ni-catalysed cycloaddition of (-)-camphorsultamacylate with methylenecyclopropane or 2,2-dimethylmethylene-cyclopropane to give 3-methylenecyclopentane carboxylic amides, 529
 additions of imines to α -sulphoxide carbanions, 6101
 aldol reaction of α -isocyanacetamides with aldehydes catalysed by chiral ferrocenylphosphine-gold complex, 6321
 aldol reaction of α -isocyanocarboxylates with paraformaldehyde catalysed by chiral ferrocenylphosphine-gold complexes, asymmetric synthesis of α -alkylserines, 235
 alkylation of chiral oxazolo-[2,3_a]tetrahydroisoquinoline and synthesis of (S)-(-)- and (R)-(+)-salsolidines, 6949
 alkylation, syntheses of *R*-laudanosine and 9-*R*-O-methylflavine, 301
 allylation of aldehydes with optically active allylsiliconates, stereochemistry and mechanism, 5667
 asymmetric dithioacetals via reaction of aldehydes and ketones with one equiv each of thiols and thioacetic acid, 6729
 borane reduction of ketones catalysed by oxazaborolidine, 4453
 catalytic hydrogenation of β -disubstituted α -phenylacrylic acids, asymmetric synthesis of carboxylic acids containing two vicinal chiral carbon centers, 5969
 chiral dithioacetals via reaction of aldehydes with one equiv each of thiol and chiral thioacid, 6733
 Diels-Alder reactions, chiral dienes as conformational model, 5225
 double-asymmetric aldol approach, synthesis of antibiotic precursor 1 β -methyl carbapenam, 6461
- enantioselective Hantzsch synthesis of dihydropyridine, via metallated chiral alkyl acetoacetate hydrazones, 6437
 enantioselective synthesis of (+)- and (-)-isocitramines from common chiral intermediate, 3311
 ene reaction catalysed by chiral organo-Al reagent, 3967
 homogeneous hydrogenation, synthesis of statine and analogs, 6327
 hydroformylation of styrene on aminophosphinephosphinites modified Pt-catalysts, 1911
 hydrogenation of activated ketones catalysed by new chiral peralkyl-AMPP Rh-complexes, 3675
 hydrogenation of plant polyprenols, synthesis of dolichols, 5343
 intramolecular [2+2] cycloaddition of keteniminium salt, asymmetric induction, approach to chiral 13-oxa-prostanoids, 3369
 intramolecular Diels-Alder reaction, enantioselective synthesis and absolute configuration of (-)-pulo'pone, 5885
 mechanistic aspects of asymmetric cis-dihydroxylation of olefins with osmium tetroxide using C₂ symmetric chiral diamine, 573
 methyl ketones and aldehydes, enantioselective aldol reaction mediated by chiral lithium amide bases, 337
 Michael addition involving chiral imines, stereochemical data in support of cyclic-like transition state, 2667
 model for asymmetric induction in non Lewis acid catalysed reactions of Oppolzer's chiral sultam, cycloaddition of Oppolzer's chiral sultam with nitrile oxides, 3555
 new synthesis of *threo* and *erythro* β -phenylserines using (+)-ketopinic acid as chiral auxiliary, 2067
 nitrogen insertion process, selectivity, 151
 optically active 2-amino-3-butenols via cyclisation of 2-butenyl dicarboxylates catalysed by chiral ferrocenylphosphine-Pd complex, 99
 optically active 3-oxa-carbacyclin precursors featuring asymmetric Horner-Emmons reaction, 1773
 Pd-catalysed intramolecular allylation forming optically active vinylcyclopropane and vinylidihydrofurans, 669
 Pd-catalysed synthesis of optically active dimethyl 2-(4-*t*-butylcyclohexylidene)-methylmalonate from *cis* and *trans*-allylic acetates, 2959
 reduction of β - and γ -nitro ketones by Baker's yeast, 4769
 reduction of ketones catalysed by glycerol dehydrogenase from Geotrichum, 2453
 reduction of ketoxime ethers, distinction between *anti* and *syn* isomers leading to enantiomeric amines, 223
 reduction of carbonyl compounds with hydrosilanes catalysed by chiral bases, 89
 ring opening of cyclic acid anhydrides with lipase in organic solvents, 1717
 Sharpless epoxidation of 1,5-bis(trimethylsilyl)-1,4-pentadien-3-ol, synthesis of chiral (E)-1-trimethylsilyl-1-alken-3,4-diols, total synthesis

- of lipoxin B, 6297
stable and reactive conformations of *N*-enoyl-bornane-10,2-sultams in absence of Lewis acids, asymmetric 1,4-hydrin additions, 3559
synthesis, entry into tricyclic nitro ergoline synthon, 4543
synthesis of 2-amino-1,4-dials, 1303
synthesis of 3,5-disubstituted pyrrolizidine alkaloids via CN(R,S) method, 1391
synthesis of 4-alkoxy-4-alkylcyclohexen-2-ones, application towards synthesis of (\pm)-abscisic acid, 5339
synthesis of α -alkylated α -amino acids via Schmidt rearrangement of α , α -bisalkylated β -keto esters, 403
synthesis of α -amino acids, comparison of enolate vs cation functionalisation of *N*-BOC-5,6-diphenyl-12,3,5,6-tetrahydro-4H-1,4-oxazin-2-ones, 6075
synthesis of α -hydroxy ketones using chiral phase transfer catalysts, 2835
synthesis of β -lactam antibiotics, application of chiral α , β -epoxyimines in ketene-imine cycloadditions leading to homochiral 3-aminoazetidiones, 5065
synthesis of (-)-actinonin using iron chiral auxiliary, 6509
synthesis of antihypertensive pyrrolidines, methylpyrrolidinate as chiral synthon, 3259
synthesis of chiral functionalised homoallylic alcohols, optically active α -sulphinyl epoxides as precursors, 5929
synthesis of chiral glycerol derivs. lipase catalysed and leading to synthesis of (*S*)-propanolol, 5173
synthesis of *cis*-substituted cyclopropanecarboxylic acid derivs, 6979
synthesis of enantiomerically pure 2-hydroxymethyl-1-amino-1-cyclopropane carboxylic acid via CN(R,S) method, 3315
synthesis of macrolide intermediate of erythronolides, 1461
synthesis of medium-ring oxygen heterocycles, enantioselective synthesis of (+)-octahydro-deacetyldebronomalurencin, 4333
synthesis of (*R*)-carnitine via hydrogenation of ethyl 4-chloro-3-oxobutanoate, 1555
synthesis of statine analogs, 2307
synthesis of *trans*-substituted cyclopropanecarboxylic acid derivs, 6983
synthesis of tricyclic nitro ergoline synthon, 3667
synthesis via acetal templates, prep of enantiomerically pure mevinolin analogs, 3757
synthesis via heteroconjugative addition using Elie's camphor template, 4773
threo- and erythro-sphingosines via asymmetric aldol reaction of α -isocyanacetate catalysed by chiral ferrocenylphosphine-gold complex, 239
total synthesis of (-)-supinidine via diastereoselective alkylation of chiral tin enolates onto cyclic acyliminium species, 6133
total synthesis of monoterpenes (-)-verbenalol and (-)-epiverbenalol, 611
- (-)-tylophorine, synthesis via enantioselective intramolecular double bond Michael reaction, 4135
unsymmetrised and symmetrised DIOP analogs bearing *p*-dimethylamino group, synthesis and thier rhodium complexes as more effective in asymmetric hydrogenations than DIOP, 4755
- Autoxidation**
sesquiterpeneperoxide nardosinon, prep from 1(10)-aristolonen-(9), 4703
- Aza compounds**
1-alkenyl-2-aza-1,3-diene, intramolecular Diels-Alder cyclisations, 4799
1-methyl-1-aza-4-cyclanones, Hofmann-like fragmentation induced by *N*-acylation, use in synthesis of 2-aza-decalones and 2-aza-hydrindanones, 3303
1,2,4,5-tetrazinedicarboxylate, reaction with *t*-butylphosphathene to give 1,2 λ^1 ,3 λ^1 -azadiphosphole, 5867
2-aza-1,3-dienes as precursors in synthesis of *N*-substituted β -lactams, 3-step synthesis of 4-acetoxy-3-phenoxy-2-azetidione, 2409
2-aza-1,3-dienes, synthesis from phospho- λ^1 -azenes, 4863
2-azaallyl anions, new method for generation and cycloaddition via transmetalation of *N*-(trialkylstannyl)methylamines, 761
2-azaallyl anions, [3+3] annulation, new synthesis of piperidines and pyridines, 4819
2-azabicyclo[2.2.2]octan-2-ones and 2,3,4-substituted cyclohexanones, diastereoselective synthesis, Diels-Alder reactions of 2-azadienes, 4573
N-alkyl-substituted triaza- and tetraaza-crown compds, synthesis, 3521
spiranic azadiphosphiranium cation, synthesis and entry to diazadiphosphetidine system, 4547
tricyanomethanimine, a new azacyanocarbon C.N., prep, 1235
- Azetidines**
and tetrahydroquinolines via clay-catalysed [2+2] and [2+4] cycloadditions of *N*-benzylidene aniline with vinyl ethers, 547
- Azetidinones**
2-, anodic dearylation, 1497
2-, as intermediates of β -lactam antibiotics, new enantio- and diastereo-selective synthesis, 815
3-amino-, homochiral, via ketene-imine cycloadditions, application, asymmetric synthesis of β -lactam antibiotics, 5065
3,3-difluoro-2-, and 2,3-dideoxy-2,2-difluoro-3-amino sugars, synthesis via Reformatsky reaction of difluoroacetate with imine, 5291
3,4-disubstituted-1-aryl-2-, synthesis and manipulation of functional groups and configuration by stereospecific reactions to produce antipodes, 1649
4-acetoxy-2-, new synthesis via electrochemical oxidation, 1409
4-acetoxy-3-phenoxy-2-, 3-step synthesis, 2-aza-1,3-dienes as precursors in synthesis of *N*-substituted β -lactams, 2409
4-allyl- and 4-(2-propynyl)-, Ag-mediated cyclisations, stereoselective synthesis of 3-substituted Δ^1 -carbapenams via *N*-C3 closure, 4253
4-allyl-, and 4-(2-propynyl)azetidiones, cyclo-functionalisation, Pd-mediated formation of Δ^1 - and Δ^2 -carbapenams, 4257
4-benzoyloxy-, synthesis of carbapenem intermediate, 2779
azetidione-2,3-diones, new approach to 3-hydroxyethyl- β -lactams and α -amino acid derivs, 3133
E- and 2-3-(hydroxyisopropylidene)azetidione-2-ones, precursors to new monocyclic β -lactam antibiotics, synthesis via application of Pd-catalysed cycloacarbonylation of primary 2-bromoallylamines, 5601
epoxy-, reaction with MgBr₂, regioselective formation of bromohydrins; route to 4-bromomethylcarbonylmethyl-2-azetidione a key carbapenem precursor, 5197
N-substituted 4-acetoxy-, reactivity towards trialkylsilyl enol ethers, synthesis of carbapenem intermediates, 3129
- Azides**
and nitrilimines, nitile oxides and nitrilylidenes, 1,3-dipolar cycloaddition with 1-chloro-2-phenyl-2-trimethylsilyl-2-phosphaethene 785
electron deficient-, reactivity towards ketene-S,S-acetals as 1,3-dipolarophiles, 6475
functionalised vinyl-, prep, 1887
intramolecular cyclisation of-, prep of oxygen-bridged aza[15]- and aza[17]annulene dicarboxylates, 219
reaction with dichloroboranes, new polyamine synthesis, 1279
sodium azide, Pd-catalysed reaction with 1,3-diene monoepoxides, 1,4-azido-hydroxylation of conjugated dienes, 4851
- Azido acids and esters**
(\pm)-2-azidocyclohexanoates, enzymatic hydrolysis, prep of (+) and (-)-*trans*-2-aminocyclohexanol enantiomers, 1903
exposed amino, azido, bromo or cyano groups in functionalised siloxy-anchored monolayers, 5593
- Aziridines**
oxaziridinium salt, transfer of oxygen to ethylenic derivs to give epoxides, 3941
sulphinylaziridines, stereo-specific desulphinylation with EtMgBr, synthesis of (Z)-*N*-arylaziridines, 4093
- Azo and azoxy compounds**
azo compds and hydrazines from *o*-diphenylphosphinoyl arylhydroxylamines, 1777
azoalkenes, treatment with carbomethoxymethylene triphenylphosphorane, prep of α -olefinated carbonyl derivs, 5787
substituted arylazo compds, thermal decomposition, rate of formation of capto-dative type radicals, 3379
- Azomethines**
"dimers" of pyrazolidin-3-one-azomethinimines without centre

- of symmetry via three step addition-elimination pathway, 2939
- Azulenes**
analog of calixarenes, synthesis of [1.1.1.1](1,3)-2-methoxyazulene, 2839
hydro-, route to via intramolecular [3+4] allyl cation cycloaddition, 6071
- Benzazepines**
5a-aryldodecahydro-2-, skeleton, novel approach, 3841
benzazepinones and isoquinolines, spirodienone lactams, synthesis via acid catalysed cyclisations of aromatic diazoacetamides, 2643
- Benzimidazoles**
compds with multiple functionalities, N-alkylation, 3033
- Benzisoxazoles**
1,2-, substituted and annelated, new synthesis via cycloaromatization of α -oxoketene dithioacetals with 3-methyl-5-lithiomethylisoxazoles, 501
- Benzodiazepines**
1,5-, synthesis of 9-(α -methyl vinyl)3-methyl[4.3-a]s-triazolo benzimidazole, 195
chiral 1H-2,3-benzo-, route to via asymmetric induction in 1,7-ring closure of diene-conjugated diazo compds, 6361
- Benzodioxins**
6-hydroxy-7-formyl-1,4-, key intermediate in synthesis of new analog of psoralen built on benzodioxinic moiety, 2665
6-methoxy 1,4-, lithiation, functionalisation at 5-position, 475
(R)- and (S)-2-hydroxymethyl-1,4-, enantioselective syntheses, 3671
- Benzofurans**
2,3-dihydro-, and 2,3-dihydro-indole derivs via intra- and intermolecular radical reactions with tributyltin hydride, C-C bond formations, 4133
hexahydrobenzofuranone, optically pure subunit common to milbemycin-avermectin macrocycles, synthesis, 3415
synthesis via Pd-promoted cyclisation of ortho-substituted aryl allyl ethers, 4687
- Benzoxazines**
dihydro-, and 1-allylbenzo-triazoles, flash vacuum pyrolysis, formation of quinolines, 953
- Benzopyrylium salts**
1-alkoxy-2-benzopyrylium-4-olates, dimers, structures, 317
- Benzothiadiazepines**
dipeptide-type 5,1-system, new, synthesis, 181
- Benzothiazines**
functionalisation of-, via a sulfoximine stabilised vinyl carbanion, 529
- Benzotriazoles**
1-allyl-, and dihydrobenzoxazines, flash vacuum pyrolysis, formation of quinolines, 953
- Betaines**
mesomeric-, of azolium azolate, synthesis and properties, 491
- Bicyclic alicyclic compounds**
1-(arylsulphonyl)bicyclo-[1,1,0]butanes, regioselective additions of hydrazoic acid and benzylamine, synthesis of *cis* and *trans* 2,7-methanoglutaric acids, 1591
1-bicyclo[3.1.1]heptyl cation, through-space effects of substituents on stability, 1299
6-methylene-bicyclo[3.3.0]octan-2-one via Ni-catalysed codimerisation of 2-cyclopentenone with methylenecyclopropanes in presence of triethylborane, 4539
bicyclic and polycyclic alkenes via Pd-catalysed intramolecular arylation and vinylation, 2919
bicyclic systems, stereocontrolled syntheses and evidence for allyl Pd/olefin-*cis*-insertion, intramolecular olefin allylations, 4705
bicyclopentyl lithium prep from [1.1.1]propellanes and intermediate for prep of 1-substituted bicyclopentanes, 289
bicyclo[2.2.2]oct-5-en-2-one, enolate alkylation and radical cyclisation, prep of tricyclic carbocycles, 5789
bicyclo[2.2.2]octa-2,5-diy., lifetime determination by dioxygen trapping, nitrogen extrusion from 4,5-diazatri-cyclo[4.4.0.0⁰,*]deca-4-ene by UV-laser photochemistry, 6605
bicyclo[2.2.2]octanones, prep, 5241
bicyclo[2.2.2]octenes, skeletal rearrangement via bicyclo-[3.2.1]octene system, synthesis of (\pm)-hinesol and (\pm)-10-epihinesol, 3105
bicyclo[3.3.0]octane-3-ones, substituted, E- or Z-selective Horner-Wittig reaction with chiral phosphonoacetates, 1775
bicyclo[4.2.0]octatriene, ultimate disrotatory opening of, prep of *rac*-form of cyclooctatetraenes bridged with methylene groups in 1,3-manner, 41
bicyclo[m,n,0]alkane rings, conversion to spirocyclic skeletons, 6927
bridged bicycloalkanes, prep via intramolecular [2+2] cycloadditions of ketenes, short synthesis of (\pm)-clovene, 1493
carbobicyclic and carbopolycyclic compds, synthesis via carbopalladation catalysed by Pd-phosphine complexes, 2915
chiral bicyclic lactams leading to asymmetric synthesis of 4-alkoxy-4-alkyloxylohexen-2-ones, 5339
cis-decalin, synthesis via Diels-Alder and double Michael addition with substituted Nazarov reagent, 5117
methylene-bicyclo[3.3.0]octanones via cyclocondensation of 21-chloromethyl-allyl phenyl-sulphone with cyclopentenones, 201
new bicyclo[2.2.1]hept-2-ene-carbon monoxide copolymers, Pd-catalysed synthesis, 2115
new bicyclo[3.2.0]hept-3-ene-2-
- ones, synthesis, 1139
norbornadienes fused with quinone units, isomerisation to quadricyclanes, 1405
syn-9-vinyl-bicyclo[6.1.0]nona-2,4,6-triene, sequential thermal rearrangements to tetracyclo[5.4.0.0⁰,1'0',1''undec a-5,8-diene, 5249
trans-bicyclo[4.1.0]hept-3-ene derivs, comparison of thermal and transition metal complex promoted rearrangements, 4803
trans-bicyclo[4.3.1]decan-10-one, synthesis, inside-outside stereoisomerism, 4691
trans-bicyclo[6.3.0]undecane ring system via intramolecular radical cyclisation of
- Bicyclic aromatic compounds**
1,2,3,4-tetrahydro-1-phosphanaphthalene, formation via cyclisation of 1,3-diphosphallene, 333
2,2-bis(dimethylamino)biphenyl and its monohydrochloride, structures, 5629
2-naphthoxide ions, photo-stimulated reaction with aryl iodides by SRN1 mechanism, 3429
3,4,7,8,9,10-tribenzobicyclo-[4.2.2]deca-1,3,7,9-tetraene, new strained bridgehead olefin, synthesis, 2329
5-arylbicyclo[3.2.0]heptan-6-ones, reactions, intramolecular cycloadditions of arylketenes with alkenes, 3175
benzenoids and biphenyls, substituted, synthesis via Diels-Alder cycloaddition of 5-methoxy-2-pyrones, 1595
benzocyclobutene, photochemistry, 2543
benzocyclopropene addition of dihalocarbene, 675
bicyclic bridgehead derivs, solvolysis, stability of carbocations, evaluation of π -conjugative effect of 2-methylene and 2-oxo substituent, 873
bicyclic esters, structural requirements in pig liver esterase optical resolution, 2697
bicyclic systems, small, conformational consequences in intramolecular cyclopropanation, 269
bicyclo[p.1.0]pi-hydrocarbons, ten classes and their anions and cations, electronic rules from structural formulae, 889
binaphthyl derivs, unsymmetrical, via coupling of iodonaphthalenes with naphthoxide ions under SRN1 conditions, 1705
bis(dimethylamino)arenes, proximity effects in mass spectra; intramolecular cyclisation of 2,2-bis(dimethylamino)biphenyls under electron impact, 5633
fused bicyclic lactam-lactone terminus of neoxazolomycin, synthesis by novel dianion cyclocondensation, 2521
fused systems with allylic angular OH group via annulation method, 4053
N,N-dialkyl-2,4-bis(trifluoroacetyl)-1-naphthylamines, acid catalysed cyclisation to naphtho[1,2-d][1,3]oxazines, 4599
naphth-1-ols, 2,4-substituted, regioselective prep, competitive dienone-phenol rearrangement, 4827
naphthalene sulphonamides, metal-

- ammonia reduction and reductive alkylation, new route to substituted naphthalenes, 4473
- octahydronaphthalene subunit of klanolide and tetrololide, stereoselective synthesis, 3541
- Bicyclic heterocyclic compounds**
- 2,3-oxaphosphabicyclo[2.2.2]oct-5-ene derivs, photolysis, generation of ester and amide derivs of metaphosphoric acid, 2627
- 2-azabicyclo[2.2.2]octan-2-ones and 2,3,4-substituted cyclohexanones, diastereoselective synthesis, Diels-Alder reactions of 2-azadines, 4573
- 3,8-diazabicyclo[3.2.1]octane moiety of naphthyridinomyoin and quinoarcin, approach via 1,3-dipolar cycloaddition of photo-generated azomethine ylides, 3525
- 3-azabicyclo[3.2.2]nonanes, conformational equilibrium isotope effect, 3551
- 4-hetero-4-anilino-piperidines, synthesis, a variant of Brulants reaction, 6827
- 4-trifluoromethylpyrazoles, synthesis via cyclisation of trifluoroacetylated hydrazones, 5281
- 5-methyl-6,8-dioxabicyclo[3.2.1]octane, exo-7 derivs, absolute configuration by VCD spectra, 745
- 6,7-diazaspiro[bicyclo[3.2.2]non-6-ene-2,1'-cyclopropane], N-extrusion, UV-laser photo generation of triplet spiro[2.6]nona-4,7-diyl diradical; conformational influence of lifetime of a 1,4-cycloheptadiyl as determined by cyclopropylcarbonyl "free radical clock", 5637
- 7-chloro-1-silyloxybicyclo[4.1.0]heptanes, reaction with FeCl₃, prep of 2-(1-chloro-alkylidene)cyclohexanones, 3239
- 7-oxabicyclo[2.2.1]hept-5-en-2-yl derivs, stereoselective amino-hydroxylation of double bond, remote substituent participation in acid catalysed decomp of aziridines and triazolines, 3695
- 8-oxabicyclo[3.2.1]oct-6-en-2-ones, photorearrangement, 6889
- 9-alkyl-9-boratabicyclo[3.3.1]nonanes, stereoselective reducing agents, 1069
- 10-membered cycloolines with one or two hetero atoms, synthesis and properties, 4529
- (±)-endo-1,3-dimethyl-2,9-dioxabicyclo[3.3.1]nonane, synthesis, 1111
- azabicyclic alkaloids, key intermediates via enantio-specific synthesis of 2-alkylpyrrolidines, 631
- bicyclic carbonolamides, 8-fragmentation leading to imides use of hypervalent organoiodine reagents, 6661
- bicyclic diazenes, Arrhenius activation parameters, use in 1,3-diyI trapping reactions and intermediate formed in deazetation, 5711
- medium-ring oxygen-, asymmetric synthesis, enantioselective synthesis of (+)-octahydro-deacetyldebrumolaurin, 4333
- N- or O-containing ring systems, Pd-catalysed synthesis, intramolecular clef in allylations, 4709
- strained-ring N-, reaction with dinitrogen pentoxide, prep of nitrimines, 2735
- strained-ring O-, reaction with dinitrogen pentoxide, prep of nitrate esters, 2723
- systems via homo-Diels-Alder and ene reactions of phosphalkynes, 1681
- thieno[3,4-d]pyrimidine C-nucleoside analog of inosine, two-step synthesis, 3537
- unsaturated 4-, 5- and 6-membered germa heterocycles with 1-3 Ge atoms, prep, 5245
- Biogenesis**
- and 2D-NMR, of anethiolide A and B from *Anthelia glauca*, 1605
- diterpene quinonemethide, bharangin from *Pygmaeopremna herbaea*, 245
- sesquiterpenoids, biomimetic germacrene-humulene rearrangement, 1829
- Biologically active compounds**
- 1-O-(1,2-di-O-palmitoyl-an-glycerol-3-phospho)-D-myo-inositol 4,5-diphosphate, analog of (ptd)Ins(4,5)P₂, synthesis, 6513
- 1α,25-dihydroxyvitamin D₃, related dienynes, Pd-catalysed synthesis, 1203
- 18-methylcarbapenam key intermediate, synthesis, 61
- 1,2:3,4-diepoxides, reactivity towards nucleophiles, 4405
- 2',3'-dideoxynucleosides, new synthesis for Aids therapy, 1239
- 2,6-disubstituted pyridine ring in place of carbons 7-9 of natural eicosanoid, synthesis of stable LTB₄ antagonist, 143
- 3'-C-cyano-3'-deoxythymidine, synthesis, 941
- 3-deoxy-D-arabino-2-heptulosonic acid and 3-deoxy-D-manno-2'-octulosonic acid, syntheses via 5-ylidene-1,3-dioxolan-4-one intermediates, 4877
- 4-trifluoromethylpyrazoles, synthesis via cyclisation of trifluoroacetylated hydrazones, 5281
- 5-acylaminouracils and 5-acylaminopyrimidine-4(3H)-ones, ring transformation into imidazoles, 4607
- 5-vinyl- and 5-ethynyl-2'-deoxyuridine-5'-triphosphates, synthesis, 4525
- 13,13-difluoro-leukotriene B₄, prep, 5665
- 19-hydroxy LTB₄, synthesis of assumed metabolite of leukotriene B₄, 2647
- α-amino phosphonic acids, γ,δ-unsaturated, via alkylation of diethyl aminomethylphosphonate Schiff bases, 4559
- α-fluoromethyl-N-methyl-phenylsulphoximine, new fluoromethylation reagent, 3365
- β,δ-diketo esters, reduction to syn-β,δ-dihydroxy esters, 6467
- β-2,7,11-cembratriene-4,6-diol, tumour inhibitory constituent of tobacco smoke, stereoselective synthesis, 4913
- 8-hydroxysulphonyl sugars, prep and reactions, 2847
- γ-oxo-acylates, synthesis, 3997
- 4575C, a combined angiotensin converting enzyme inhibitor-β-adrenoceptor antagonist, 799
- acyclic nucleoside analogs, synthesis of 1-(hydroxyalkoxy)-pyrimidines, 4013
- adrenergic blocking agents, 2955
- agalasidine A, synthesis, 4957
- alkylideneacetaldehydes, first synthetic approach, 2861
- alkyl substituted polyamines, convenient route, 6651
- (-)-anisomyoin or (+)-anisomyoin, new synthesis starting from D-tyrosine or L-tyrosine, 4419
- aminopeptidase B inhibitor, total synthesis of OF4949-111, 559
- amyloglucosidase inhibitor, synthesis of 6-epicastanospermine and 1,6-di-epi-castanospermine and synthesis of L-6-epicastanospermine and L-1,6-diepicastanospermine from D-gulonolactone, 3603
- antibacterial pigment from *Bendriella membranosa* confirmed as 4,5,8-trihydroxyquinoline-2-carboxylic acid, 2137
- antimicrobial alkaloid haliconadamine, structure and isolation from *Haliclona* sp., 3427
- antithrombin activating pentasaccharide, synthesis, a new heparin-like fragment with two 3-O-sulphated glucosamines, 803
- antiviral acylnucleoside 9-(3'-hydroxypropoxy)guanine, synthesis, 701
- argitoxins 636,659 and 673 total asymmetric synthesis, 6223
- asymmetric synthesis of antihypertensive pyrrolidines, methylpyroglutamate as chiral synthon, 3259
- asymmetric synthesis via acetal templates, prep of enantio-merically pure mevinolin analogs, 3757
- asymmetric synthesis, entry into tricyclic nitro ergoline synthon, 4543
- avermectin B_{1a}, enantiospecific synthesis of spiroketal position, 2923
- aza-diene substrate for cycloaddition and Michael-type reactions, 4401
- aza-Wittig reaction of iminophosphoranes with isocyanides, CO, or CS₂ to give functionalised 4(3H)-quinazolines and benzimidazo[1,2-c]quinazolines, 3849
- azadirachtin, conversion to azadirachtin skeletons, chemistry of insect antifeedants from *Azadirachta indica*, 1849
- AZT analogs, synthesis and biological evaluation against HIV, 3211
- bacterial lipopolysaccharides, prep of trisaccharide part structures containing KDO and 1-dephospho lipid A, 2227
- benzoshikonin and benzo-cycloshikonin, synthesis, 85
- bioactive alkaloids naphthyridinomyoin and quinoarcin, approach to 3,8-diazabicyclo[3.2.1]octane moiety via 1,3-dip'olar cycloaddition of photo-generated azomethine ylides, 3525
- biotin, enantioselective synthesis, 57
- bis-des-hydroxy, bis-des-methoxy CC-1065, synthesis, DNA binding and biological activity, 131
- C-glycosylation of substituted heterocycles under Friedel-Crafts conditions, two-step synthesis of thieno[3,4-d]pyrimidine C-nucleoside analog of inosine, 3537
- capped oligoribonucleotides, new

- synthesis via use of protected 7-methylguanosine diphosphate deriv as donor for triphosphate bond formation, 2969
- capsular polysaccharide of *Haemophilus influenzae* type b, new approach to synthesis of dimeric fragment, 4049
- (±)-*cis*-trikentrin, synthesis, 391
- (±)-*clavam*-2-carboxylic acid, total synthesis, 1609
- chlorophyll derivs, isolation of meso-oxochlorins and ring opening of zinc meso-oxochlorins to give dihydrobiliverdins by two oxygen molecule mechanism, 5707
- compactin and mevinolin, synthesis of chiral synthon for lactone portion, 1255
- cyclodepsipeptides jaspamide and geodiamolide A and B, syntheses and synthesis of (2*S*,4*E*,6*R*,8*S*)-8-hydroxy-2,4,6-trimethyl-4-nonenic acid, 1269
- cytidine 5'-triphosphate, generation using adenylate kinase, 1123
- cytochalasin, isoindolone, synthesis, allyl selenides from allyl silanes and $\text{PhSe}^+(\text{CH}_3)\text{PhBF}_4^-$, 2287
- cytotoxic salivins with benzotropone chromophore from *Salvia miltiorrhiza*, 4603
- diacetylenes, medium-sized carbocyclic, synthesis and properties, 2813
- didemnin A, B, C and proydidemnin A, synthesis, 4407
- didemnins, 23-membered peptolide ring formation, 3057
- didemnins, β -keto ester units, synthesis using 2,2'-carbonyl-bis(3,5-dioxo-4-methyl-1,2,4-oxadiazolidine), 2661
- dihydropyridine, enantioselective Hantzsch synthesis via metallated chiral alkyl acetoacetate hydrazones, 6437
- dihydroteleocidin B-4, total synthesis, 6267
- dimeric Lc^X antigen, $111^{\text{H}}\text{Fuc}_2\text{NLc}_2\text{Cer}$:pivaloyl auxiliary for stereocontrolled glycosylation, 5267
- dipeptide-type 5,1-benzothiazocine system, new, synthesis, 181
- diterpenoid (+)-taxodone, synthesis from (-)-abietic acid, 5751
- diterpenoids, novel 6,7-cyclolabdane from *Cuytia richardiana*, 3627
- DL-*myo*-inositol 1-phosphate and its thiophosphate analog, synthesis, 3921
- enzyme inhibitors, synthesis of 2'(*S*),3'(*R*),5'-trihydroxypentyladenine, 1107
- eudistomin K, crystal structure and absolute stereochemistry, 4971
- FK-506, C-10 to C-18 segment, diastereospecific non-racemic synthesis, 277
- FK-506, C-20 to C-34 segment, diastereospecific non-racemic synthesis, 281
- ginkgolide A, total synthesis, 3205
- ginkgolide B, total synthesis, enantioselective route to key intermediate, 3201
- goniodomin A, polyether macrolide from *Gonioloma pseudogoniolax*, 1149
- ichtthyotoxic diacylglycerols, umbraculmin A and C, structures and isolation from *Umbraculum mediterraneum*, 3613
- inositol(1,3,4)-triphosphate, fluorinated analogs and tritiated enantiomers, synthesis, 5217
- (-)-isococenioclide, synthesis from D-ribose, 2413
- isomeric 8,9,12-trihydroxyicoso-5(2),10(*E*),14(*Z*)-trienoic acids, enantiospecific synthesis, 5497
- ketomethylene dipeptide analogs, simple versatile synthesis, 1577
- lignans(-) and (+)-burseran, (-)-cubebin, and (-)-hinokinin, total synthesis by diastereoselective conjugate addition of benzyl anions to 2-(*R*)- and (*S*)-benzyloxy-2,5-dihydro-4-(3,4-methylenedioxybenzoyl)furan, 3599
- lipophilic nucleotide phosphate analogs, synthesis of lipophilic isomers of ATP, 1615
- lipoxin B, total synthesis, synthesis of chiral (*E*)-1-trimethylsilyl-1-alken-3,4-diols via Sharpless asymmetric epoxidation of 1,5-bis(trimethylsilyl)-1,4-pentadien-3-ol, 6297
- manoalide and acomanalide, synthesis via Pd-catalyzed coupling of allylhalide with CO and 2-silyl-4-stannylfuran, 1173
- methylene bridged C-disaccharides, synthesis, 1375
- mevinic acid analogs, elaboration via chiral synthons 4865
- muscarines, total synthesis using stereospecific photo ring expansion of a cyclobutanone, 159
- (±)-*N*-acetylcolchicol, total synthesis, 4839
- new glycosidation reaction, combination of $\text{Cp}_2\text{MgLi}-\text{AgClO}_4$ for activation of glycosyl fluorides, β -selective glycosidation of D-mycinoise, 3567
- nitroamine derived diazenium ions, displacement of O- vs N-substituents by three divergent mechanisms, 2903
- O-phosphotyrosine-containing peptide, synthesis using modern deprotection, 3591
- oligodeoxyribonucleotides containing 5'-aminoalkyl-phosphonates, synthesis, 5537
- one-step enzymatic synthesis of dihydroanguinarine from protopine, 5625
- optically active monocrotaline, a carcinogenic pyrrolizidine alkaloid with 11-membered dilactone, synthesis, 5139
- optically pure isoserine, enantioselective synthesis, 2189
- oxetane nucleosides, approach to synthesis via reaction of adenine with an α -chlorooxetane, 1451
- oxetanocin with an oxetane ring, synthesis of chiral D-oxetanocyl acylates, 4739
- oxetanocin with oxetane ring, synthesis, 4743
- pentacyclic aromatic alkaloid ascididemin from *Didemnum* sp, antileukemic activity, 1177
- (+)-periodial, synthesis and absolute structure, 4591
- phosphosphingoglycolipid from *Turbo cornutus*, synthesis, 1189
- phosphoramidite of 2'-deoxy-5,6-dihydro-5-azacytidine, synthesis and application to synthesis of DNA containing dihydro-5-aza- and 5-azacytosine bases, 1767
- platelet activating factor and its enantiomer, enantioselective synthesis via ring opening of glycidyl tosylate with 1-hexadecanol, 4393
- polycyclic phenylethanolamines, synthesis via arynic condensation of ketone enolates, 1385
- previtamin D₂ and vitamin D₂, interconversion at high pressure, 3021
- (±)-prosurugatoxin, synthesis and ring transformation into surugatoxin, 1547
- pyrrolidine ring for kainoids, synthesis, 2195
- pyrromethanones, synthesis, 4823
- R-laudanosine and 9-R-O-methylflavinine, syntheses by asymmetric alkylation, 301
- (*S*)-manoalide diol, synthesis and absolute configuration of natural manoalide, 2401
- spiroketals, synthesis, 3609
- stage specific embryonic antigen-1 (SSEA-1) A glycoheptaosyl ceramide, synthesis, 4759
- stage specific embryonic antigen-3 (SSEA-3), globopentaosyl ceramide, use of 2,4,6-trimethylbenzoyl group as a stereocontrolling auxiliary in total synthesis, 5681
- staine analogs, asymmetric synthesis, 2307
- syn- β -hydroxy- α -amino acids, new entry, 3125
- tartaric acid, prep of most biologically active insecticides, 1079, 1083
- tetramortriterpene, synthesis of polyoxygenated decalin with limonoid structural homology common to salarin and azadirachtin, 1853
- thioether phospholipids, new approach to synthesis via prep of 1-thiohexadecyl-2-acylamino-glycerophosphocholines, 31
- thiophosphate analogs of DL-*myo*-inositol 1,2-cyclic phosphate, synthesis, 3919
- threo* β -hydroxy- α -*N*-methyl amino acids and new analogs of cyclosporin amino acid, asymmetric synthesis via epoxides, 5205
- trans*- and *cis*- α -(carboxycyclopropyl)glycines, synthesis as L-glutamate analogues with neurobiological activity, 1181
- trans*-2,5-dialkyltetrahydrofurans, antagonists of platelet activating factor, indicative of dual binding modes to PAF receptor, 2899
- tricyclic nitro ergoline synthon, asymmetric synthesis, 3667
- tricyclic esterterpenes, synthetic studies on opibolins, 4909
- unsymmetrically substituted furans, use in furan-carbonyl photocycloaddition, synthesis of a kadsurenone-ginkgolide hybrid, 6689
- uteroglobin-like peptide cavities, synthesis of antiparallel and parallel dimers of bis-cysteine peptides, 3845
- vinyl glycines, 4-substituted, synthesis via phosphorane and phosphonate synthons, 3361
- Bioluminescence**
lampteroflavin, compd from *Lampteromyces japonicus*, 1169
- Biosynthesis**
3 β -(hydroxymethyl)-A-nor-5 α -cholest-15-ene in *Phakellia arvensis*, 4081

- 8-R-HPETE and precalvalone A from arachidonate in species of Caribbean coral widespread route to marine prostanoids, 2555
- Al-catalysed rearrangement of tosyl esters of pimaric and isopimaric series, products with cyclopropane ring and strobane skeleton, 1695
- C-nucleoside-, enantiospecific synthesis of L-(3R and 3S)-(β-D-ribofuranosyl)-pyroglutamic acids as possible intermediates, 375
- chromomycin A, biosynthesis, 5513
- experimental biosynthetic interconversion of cyclopropene sterols in *Calyx niccaensis*, 6051
- glycolipid-, inhibition, by uridine 5'-diphosphate glucose analogs, 4893
- lanosta-9(11),24-dien-3β-ol to 14α-methylcholest-9(11)-en-3β-ol, conversion in *Holothuria arenicola*, 2159
- momensin, total synthesis of putative triene intermediate activated as capryloysteamine thiol ester, 6357
- mugineic acid and 2'-deoxymugineic acid in *Hordeum vulgare*, phytosiderophore study, 1053
- Murrayella pericladoides*, isolation of 12-(S)-Hepe, revised structure of acyclic iicosanoid from *Laurencia hybrid* and biosynthesis of marine prostanoid hybrid diactone, 2015
- obafuorin from p-aminophenylalanine in *seudomonas fluorescens*, 6353
- phenanthroindolizidine alkaloid tylophorine, implication of phenylacetaldehydes, 807
- premonensin B, stereoselective synthesis of C(8)-C(20) fragment, 2357
- swainsonine in *Astragalus oxyphysus*, 4875
- Bismuth and compounds**
- 1-chloro-1,1-diaryl-3,3-bis(trifluoromethyl)-3H-2,1-benzoxabismoles, formation, stable pentacoordinate bismuth compds (10-Bi-5), 3817
- stable pentacoordinate compds of-, (10-Bi-5), formation of 1-chloro-1,1-diaryl-3,3-bis(trifluoromethyl)-3H-2,1-benzoxabismoles, 3817
- trichloride of-, as new catalyst for aldol reactions, 4719
- triphenylbismuth bis-trifluoroacetate, Cu-catalysed phenylation of indoles, 1115
- trivalent deriva, alkylation of amines, 857
- Bonds**
- C(2)-H_α and C(2)-H_β bonds, magnitude of ¹J_{C-H} for cis-4,6-dimethyl-1,3-dioxane and analogous 1,3-dithiane, 5621
- C-C bond formation in Ald reactions, new method using PhIO.HBF₄ complex and silyl enol ethers, 3703
- C-C bond formation, stereoselective, in carbohydrates by radical cyclisations, 6585
- C-C bond, heterolytic cleavage, photolysis of N,N-dimethyl-2,2-diphenylethylamine in MeOH, 431
- C-C bond, synthesis via Pd conversion of telurides R¹-Te-R into coupled R-R₂ and metallic tellurium, 3533
- C=C formation, new method promoted by tri-n-butylphosphine and Zn, 6119
- C-S bond formation catalysed by bis(diphenylphosphino)-methane complexes of Pt, 4477
- C_p-Y π-bond, cleavage in reaction of aldehydes and ketones with dicyclopentadienyliumtrium chloride, 6931
- transannular bond formation between Sb and N atoms in dibenz[c,f][1,5]azastibocine system, formation of X-Sb-X and X-Sb-N⁺ hypervalent bond, 5401
- Boron and compounds**
- 1-alkynyl-diisopropoxyboranes, synthesis, 2631
- alkynyltrialkylborate reactions, Me group migration, 4181
- aminoborane, β-elimination via lithium-liquid ammonia reduction, 4713
- arene-diazonium tetrafluoroborates, reactivity towards sulphur nucleophiles in aprotic solvents, synthesis of S-aryl thioacetates, 4185
- asymmetric borane reduction of ketones catalysed by oxazaborolidine, 4453
- asymmetric hydroboration and X-ray structure of monoisopinocampheylborane-N,N,N',N'-tetramethyl-ethylenediamine complex, 3385
- BF₃.OEt₂ and iodosylbenzene, use in new allylation of aromatic compds from allyltrimethylsilane, 667
- boron annulation, synthesis of sesquiterpene pseudoguanolide lactones confertin and helenalin, 521
- boron trifluoride promoted reaction of cyclic ethers and dithio-substituted allylic anions, 5939
- camphanylboronic acid, chiral derivatising agent for optical purity determination of diols, 6063
- carboration of 1-alkynes and application to synthesis of di- and tri-substituted alkenes, 1811
- chiral boron reagents, control by of aldol condensations with chiral ethylketones, 585
- dichloroboranes, reaction with azides, new polyamine synthesis, 1279
- diisopropyl tartrate modified (E)- and (Z)-crotylboronates, reactions with achiral aldehydes, 5579
- [E]-2-(1-substituted-1-alkenyl)-1,3,2-dioxaborinanes, conversion into isomeric [Z]-compd, stereospecific synthesis of both [E]- and [Z]-1,2-disubstituted vinyl bromides, 21
- Et₂B-mediated Reformatsky-type coupling of alkyl iodides, methyl vinyl ketone and carbonyl compds, 1041
- etherated boron trifluoride-triethylsilane system, reduction of 1-phenylethanol, stereoisotopic study, 5793
- hydroboration of allylsilanes, regiochemistry, 2073
- hydroboration of allylsilanes, stereochemistry, 2077
- iodosobenzene tetrafluoroborate, stable electrophilic hypervalent iodine reagent without nucleophilic ligands, 3717
- new borohydride chemistry, role and purification of potassium hydride, 3195
- sodium perborate oxidation of cyclic and acyclic alkenes to oxiranes or vicinal acetoxy alcohols, 2967
- sodium phenylseleno(tri-ethoxy)borate generated from (PhSe)₂ with NaBH₄ in EtOH, 347
- stannyborate reagent, Cu-catalysed addition to 1-alkynes yielding 1,2-borostannyll-1-alkene, 261
- stereoselective reducing agents, 9-alkyl-9-boratabicyclo[3.3.1]nonanes, 1069
- trialkylborohydrides with large steric requirements, prep, purification of sodium and potassium hydrides, 3197
- tropylum tetrafluoroborate and allylic silanes, synthesis of 7-alkyl-cycloheptatrienes, 5897
- Z-1-alkenylboronates, new prep by cis-hydrogenation of 1-alkynyl-diisopropoxyboranes, 2635
- Cage molecules**
- cage-structure halogenated deriva and alicyclic and aromatic ketones, reduction potentials via cyclic voltammetry, 3935
- sequential Friedlander condensations between pentacyclic bis(ketoester) and o-aminobenzaldehyde, 6681
- symmetrical compds, all 6,8 or 10 lone pairs on N- atoms or intervening pyridine rings oriented towards central cavity, synthesis, 1789
- Calixarenes**
- azulene analog, synthesis of [1.1.1.1](1,3)-2-methoxyazulene, 2839
- calix[6]arenes and p-alkylcalix[8]arenes prep via p-n-alkylphenol-formaldehyde condensation, 2659
- Calorimetry**
- photoacoustic-, heats of formation of carbonyl and nitrile ylides, 2623
- Carbenates**
- 2-butylene di-, cyclisation catalysed by chiral ferrocenyl-phosphine-Pd complex, asymmetric synthesis of optically active 2-amino-3-butenols, 99
- allylic and homoallylic groups of-, steric control of epoxidation, 2475
- N,N'-disubstituted ureas, synthesis, 2525
- o-nitrobenzyl-quenched, synthesis and photoactivation, 65
- Carbamoylation**
- biscarbonyl diselenides, new carbamoylating reagents, Lewis acid promoted carbamoylation of aromatic compds, 6121
- Carbenions**
- 1,1,4,4-tetrakis(trimethylsilyl)butane-1,4-diyl dianion a reagent for Peterson reaction via dimerisation of 1,1-bis(trimethylsilyl)ethylene, 6939
- 2-aza-pentadienyl anions, reaction with carbonyl compds, regioselectivity, 3647
- 2-azaallyl anions, new method for generation and cycloaddition via transmetalation of N-

- (trialkylstannyl)methylamines, 761
- 2-azaallyl anions, [3+3] annulation, new synthesis of piperidines and pyridines, 4819
- α to nitriles, competition between allylic substitution and Michael addition, 1713
- α -sulphonyl-, open chain, configuration, X-ray crystal structure of [(phenylsulphonyl)-isopropylolithium-diglyme], and [(α -phenylsulphonyl)- α (methyl)-benzylolithium-diglyme]₂, 1259
- α -sulphoxide-, asymmetric additions to imines, 6101
- alkyl- and π -allyl-palladium species, hydride ion capture, tandem cyclisation-anion capture, 4329
- allyl anions, silyl-substituted ring-opening of oxiranes, a regiochemical chameleon, 4281
- allylic anions, dithio-substituted and cyclic ethers, boron trifluoride promoted reaction, 5939
- anion complexing agent, new type 12-silacrown-3, synthesis and transport properties, 297
- anion derived from benzophenone benzoylhydrazone, reactivity in presence of electrophiles, 3581
- anionic polycyclisation, new one-step construction of 13 α -methyl 14 α -hydroxy steroid, 6033
- anions and cations of ten classes of bicyclo[1.1.0]pi-hydrocarbons, electronic rules from structural formulae, 889
- benzyl anions, diastereoselective conjugate addition of to 2-(R)- and (S)-benzyloxy-2,5-dihydro-4-(3,4-methylene-dioxymethyl)furan, prep of ligands(-) and (+)-buseran, (-)-cubebin, and (-)-hinokinin, 3599
- cyclooctatetraene dianion, stereoselective cycloannulation and bridging, 2809
- dianion cyclocondensation, synthesis of fused bicyclic lactam-lactone terminus of neoxazolomycin, 2521
- enolate anions, nucleophilic addition to N-methoxycarbonyl-imines of α -methoxy carbamates, new synthesis of β -amino acids, 231
- heteropolyanions as oxidation catalysts in a 2-phase system, 823
- macrotricyclic anion receptor molecules, dome-shaped cyclophane type, synthesis, 1709
- nonconjugated sec-, [2,3]-Wittig rearrangement, synthesis of [(allyloxy)methyl]sulphones as equivalents, 5233
- radical alkyl-nitroalkylanion cross coupling, cobaloxime mediated, 6545
- radical anions, generated sonochemically by cyclisation of O-allyl benzamides, 2183
- Schiff base-, reactions with electrophiles, role of initial stereochemistry, 2441
- stabilised-, of sulphoxide, stereoselective conjugate additions to α,β -unsaturated esters, 5821
- stabilised-, via alkylolithium-induced decarboxylation on non-enolizable carboxylic acids, anion equivalent to Hunnsdieker reaction, 4505
- two dioxophosphidure dianions, cycloaddition of two mols of unsaturated dihalide to give unsaturated macrocyclic phosphine tetraoxides, 6247
- vinyl anions, oxidation, stereo- and regioselective formation of silyl enol ethers, 4269
- vinyl-, sulphoximine stabilised, functionalisation of benzothiazines, 529
- vinylpalladium species, hydride ion capture, tandem cyclisation-anion capture, 4325
- ylide anions from semi-stabilised phosphonium ylides, stereochemistry of Wittig reactions, 485
- Carbapenems**
- 18-methyl carbapenem antibiotic precursor, synthesis via double-asymmetric aldo approach, 6461
- 18-methyl carbapenem antibiotic precursors, synthesis via double-asymmetric aldol approach, 6461
- 18-methyl-, key intermediate, synthesis, 61
- (5R,6R)-, synthesis and conversion into (+)-PS-5, 4305
- Δ^1 - and Δ^2 -, Pd-mediated formation, cyclofunctionalisation of 4-allylazetidiones and 4-(2-propynyl)azetidiones, 4257
- Δ^1 -, 3-substituted, stereoselective synthesis via N-C3 closure, Ag-mediated cyclisations of 4-allyl- and 4-(2-propynyl)azetidiones, 4253
- intermediate, synthesis of 4-benzyloxyazetidione, 2779
- key precursor of-, alternative route to 4-bromomethyl-carbonylmethyl-2-azetidione, 5197
- novel Diels-Alder approach, 6341
- synthesis from substituted dihydroxyrans, 6345
- Carbazoles**
- 3-acyl-, synthesis and further elaboration into 6H-pyrido-carbazoles, 6505
- Carbenes**
- aryl chromium complexes of-, reaction with 1-hexene, formation of unusual FDiels-Alder cycloaddition products, 2513
- complexes of-, non-stabilised, *in situ* generation via intramolecular acetylene insertion, new two-alkyne annulation and new prep of γ -keto esters, 415
- complexes of-, synthesis of donor-acceptor substituted cyclopropanes, 2315
- dihalocarbene, benzocyclopropene addition, 675
- dimethoxy-, O-H insertion into MeOH(D), primary kinetic isotope effect, 6417
- Fischer complex of-, and 1,3-dienes,
- furan chromium complexes of-, reaction with alkynes, synthesis of cyclopentanones, 3403
- highly functionalised-, and cyclopropanes from tetrahalocyclopropanes, 6147
- iron complex of-, cationic cyclisation, 4921
- methoxyphenyl-, extraordinary selectivity, case of the curious "olefin", 2559
- nitro-, rearrangement to acyl nitroso compds, 5719
- vinyl-, derived by intermolecular trapping during stereoselective ring opening of 3-substituted cyclopropanes, 6149
- Carbene halogen derivatives**
- chlorofluoro-, generation dehalogenation of fluorotrichloromethane with reduced titanium, new synthesis of 1-chloro-1-fluorocyclopropanes, 6749
- dichloro-, insertion into C_A-S bond, 5877
- chlorophenyl-, reactivity and selectivity in intermolecular insertion, 5863
- dihalor-, benzocyclopropene addition, 675
- phenylchloro-, p-substituted, reaction with acetone, kinetics and spectroscopy of ylides formed, 3419
- Carbodiimides**
- conjugated-, via aza-Wittig reaction of iminophosphorane with isocyanates and their ring closure to 2-aminopyridine derivs, 379
- Carbohydrates**
- 1-bromo-2,3,4,6-tetra-O-acetyl-8-D-glucopyranosyl chloride, treatment with silver triflate in presence of alcohols, orthoesterification at anomeric centre, 2651
- 1,4-anhydrosorbitol, prep of optically pure hexahydrobenzofuranone subunit common to milbemycin-avermectin macrocycles, 3415
- 2-deoxy-1,3,4,6-tetra-O-acetyl-2-trimethylammonio- α -D-glucopyranose chloride, alkaline hydrolysis, 2047
- 2,3,6,6-perdeutero-cyclodextrins, NMR spectroscopic structure detn, 4467
- 3-deoxy-D-arabino-2-heptulosonic acid and 3-deoxy-D-manno-2-octulosonic acid, syntheses via 5-ylidene-1,3-dioxolan-4-one intermediates, 4877
- 3-deoxy-D-manno-2-octulosonate-8-phosphate, synthesis from D-arabinose, generation of D-arabinose-5-phosphate using hexokinase, 427
- 3-deoxy-D-nonulosonic acid, synthesis via thermal rearrangement of N-acetyl-N-nitrosoneuraminic acid deriv, 4449
- 3-O-benzyl-6-deoxy-D-hexofuranosyl-6 radicals, intramolecular H-shift, configuration at 1'-position of 6-deoxy-3-O-(1-phenylalkyl)-1,2-O-isopropylidene-D-allorofuranoses, 5297
- (3S)- and (3R)-[3-³H]abequose, stereospecifically labelled, synthesis, 4221
- 4-acetoxy-3-O-benzyl-1,2-isopropylidene aldotetroses from D-glucose, 6163
- α and β (1-6) mannodisaccharides by deuterium substitution, effect on relaxation rate and Noe, 4457
- α -chlorooxetane, synthesis and X-ray structure, 1449
- α -homojirimycin, glucosidase inhibitor, isolation from *Omphalea diandra*, 6483
- β -cyclodextrins, modified, effect on molecular motion of guest molecule, 1413
- β -D-galactopyranoside, primary OH group, formation of an ester bond with 2-aminoethylphosphonic acid and its methyl substituted

- derivs, 1199
- β -hydroxysulphonyl sugars, prep and reactions, 2847
- γ -cyclodextrin thiazolium salt holoenzyme mimic for benzoin condensation, 1635
- aldehyde-aldose, 2,3-O-isopropylidene derivs, unusual [2+2] cycloaddition with allylsilane catalysed by BF₃ etherate to give homocallyl alcohols, 4953
- aldohexoses, unprotected, Wittig reactions, formation of optically active tetrahydrofurans and tetrahydropyrans, 693
- 'allyl'-functionalised cellulose disc supports, simultaneous multiple synthesis of protected peptide fragments, 5871
- ammonium 3-deoxy-D-manno-2-oxulosonate from D-mannose via cobaloxime-mediated radical alkyl-alkenyl cross coupling, 3191
- antithrombin activating pentasaccharide, synthesis, a new heparin-like fragment with two 3-O-sulphated glucosamines, 803
- arabinose, synthesis of patulin, 2875
- branched nitrosugars by Henry reaction of 3-nitrobutanal with aldehydes, synthesis of unnatural D-evermitroso analogs, 6083
- C-glucoopyranosides, 2',3'-unsaturated, diastereoselective synthesis, 3323
- C-glucoopyranosides, 2,3-unsaturated, guideline to assignment of correct anomeric configuration, 5549
- capsular polysaccharide of *Haemophilus influenzae* type b, new approach to synthesis of dimeric fragment, 4049
- capsular polysaccharide of *Haemophilus influenzae*, synthesis of fragments, 1525
- carbocycles from-, simple route to enantiomerically pure prostaglandin intermediate, 5521
- cellulose acetate deriv as polymer support for phosphotriester approach to oligonucleotides, 647
- D-galactopyranosyl, diastereoselective transfer to meso diols catalysed by β -galactosidases, 5743
- D-glucose, synthesis of alexine, 3-epialexine and 7-epialexine, 5441
- D-glucose, synthesis of leukotriene A₄ methyl ester, 991
- D-glucose, synthesis of (+)-negamycin, 4077
- D-glucose, synthesis of (+)-sesbanimide, 3095
- D-mannitol, total stereoselective synthesis 3'-azido-3'-deoxythymidine and 3'-azido-2',3'-dideoxyuridine, 5349
- D-mycinoise, total synthesis from isocorbic acid, 5723
- D-ribose, synthesis of (-)-isocornaciolide, 2413
- D-xylose triene deriv, stereoselectivity in intramolecular Diels-Alder reaction, 481
- derived lactols, unusual reactions with stabilised phosphorus ylides, specific intramolecular OH group effect leads to high selectivity, 6823
- dimeric Lc^x antigen, 111³V¹Fuc₂nLc₂Cer:ipivaloyl auxiliary for stereocontrolled glycosylation, 5267
- disaccharide conformations, approach via interglycosidic ¹³C-¹H coupling constants, 199
- dodecanyl tri- and tetrarhamnoside, partially acetylated derivs from *Gleistopholis glauca*, 1837
- glycols, reaction with pyridinium poly(hydrogenfluoride) giving Ferrier rearranged sugar fluorides, 1363
- higher carbon sugars, synthesis via induced radical additions of tributyltin hydride and azobisisobutyronitrile, 2335
- higher sugar allylic alcohols, new approach, 1193
- in diacetone glucose system, S_N2-substitution of sterically crowded alkyl sulphonates, 455
- L-gulonolactone, synthesis of D-deoxymannojirimycin and D-mannonolactone; D-gulonolactone, synthesis of L-deoxymannojirimycin and L-mannonolactone, 2871
- L-hexenulose, route via D-glucal, 4939
- methylated cyclodextrins, adduct formation, mass spectrometric investigation, 2103
- methylene bridged C-disaccharides, synthesis, 1375
- O-4,0-6-branching tri-D-glucoopyranosides, effect of O-4 linked residues on soln conformations about C5-C6 bonds at (1-6)-linkages, 4461
- oxetane nucleosides, approach to synthesis via reaction of adenine with an α -chlorooxetane, 1451
- polyether antibiotic salinomycin, stereocontrolled synthesis, crucial role of 4-methoxybenzyl protecting group for OH functions, 5143
- pure deblocked mono- and disaccharides via anomeric deblocking of 2-trimethylsilylethyl glycosides, 361
- pyranosidic α -alkoxy vinyl ethers, acid treatment to give homologated conjugated enals for C-glycoside synthesis, 5533
- ribofuranosyl radical, addition of olefins, synthesis of showdomycin, 351
- selective protection at primary OH function by p-anisyl ether, 1389
- stage specific embryonic antigen-1 (SSEA-1) A glycoheptaosyl ceramide, synthesis, 4759
- stereoselective C-C bond formation by radical cyclisations, 6585
- sugar oximes, electro-reduction, 3699
- tetrasaccharide deriv, synthesis and identification with 1-dephosphorylated compd derived from natural lipopolysaccharide of *E. coli* Re mutant, 6325
- tetroses and pyranoses via diastereoselective aldolisation mediated by rhodium, 3761
- tetroses and pyranoses, diastereoselective aldolisation mediated by rhodium, 4649
- uridine 5'-diphosphate glucose, analogs, inhibition of glycolipid biosynthesis, 4893
- Carbonates**
- allylic-, diastereoselectivity in carbonyl allylation using PdCl₂(PhCN)₂-SnCl₄ system, 3563
- allylic-, silyl-substituted, Pd-catalysed regioselective reaction with vinyl epoxide, 343
- hydroxy-, by direct conversion of 2,3-epoxy alcohols under mildly basic conditions, 6389
- Carbonium ions**
- 1-bicyclo[3.1.1]heptyl cation, through-space effects of substituents on stability, 1299
- γ -aromatic dication and stabilised trimethylenemethanes, 6921
- (η -1-substituted-pentadienyl)-(tricarboxyl)iron cations, reactivity with malonate nucleophiles, 1343
- (η -1-substituted-pentadienyl)-(tricarboxyl)iron cations, reactivity with malonate nucleophiles, 1343
- carbocations derived from 2-cumyladamantan-2-ol and its n⁺-Cr(CO)₆ complex, unusual behaviour, 4787
- carbocations, stability in solvolysis of bicyclic bridgehead derivs, evaluation of π -conjugative effect of 2-methylene and 2-oxo substituent, 873
- cations and anions of ten classes of bicyclo[p.1.0]pi-hydrocarbons, electronic rules from structural formulae, 889
- dication salts, FD, FAB and ⁸⁸Cr-FD mass spectrometry, 3463
- highly charged multi-triphenylmethylium ions, ¹H NMR spectra, 5501
- iminium cation, selective generation by photosensitised oxidative reaction, 4153
- ketenium ions and alkenes, [2+2] cycloadditions, stereoselective synthesis of substituted cyclobutylamines, 4309
- oxocarbenium ions, acidity constants, literature data and indirect estimates, 5541
- propargyl cations generated from triethyl orthopropolate, intermediates in low-temp addition of 1,3-dienes to ethyl propiolate, 3407
- radical cation and dication of 2,5,8,11-tetra-t-butyl-peri-xanthenoxanthene, prep via reversible electrochemical oxidation, 4533
- radical cation of 2,3,6,7-tetrahydrobenzo[1,2-b:4,5-b']difuran deriv, bromination, 3721
- radical cation salts of unsymmetrically substituted tetrathiafulvalene and tetraselenafulvalene, synthesis and characterisation, 2185
- spricane azadiaphosphorane cation, synthesis and entry to diazadiphosphetidine system, 4547
- tris(phenylethynyl)methyl and α,α -bis(phenylethynyl)benzyl cations, ¹³C NMR; tris- and bis-ethynologs of triphenylmethyl cation, 5157
- Carbonylation**
- aerobic oxidative-, of olefins, prep of β -hydroxyalkanoic acid derivs, 4435
- bis-, photochemical reactions, absence of ethylenedione, 6641
- cyclo-, of allyl halides and acetylene derivs mediated by Ni(CO)₄, improved two-step method, 5811
- cyclo-, Pd-catalysed, of primary 2-bromoallylamines, application to synthesis of E- and Z-3-(hydroxyisopropylidene)azetidino-

2-ones, precursors to new monocyclic β -lactam antibiotics, 5601
 mono and double-, of t-butyl bromide mediated by SmCp_2 , 6097
 Pd-catalysed-, of allyl phosphates and allyl acetates, selective synthesis of β,γ -unsaturated esters, 4945
 photo-, of alkyl iodides in presence of metal carbonyls, 3833
 tertiary alkyl halides, synthesis of pivaloyl halides, 4569

Carbonyl compds

1,3-di-, 2-alkenyl substituted, I_2 -induced cyclisation, approach to furan derivs, 4987
 1,4-di-, prep via reaction of alkyl 4-hydroxy-2-alkynoates and 4-hydroxy-2-alkyn-1-ones with Pd tributylammonium formate and with tributylamine, 1457
 6,7-unsaturated carbonyl radical cyclisations, studies, 2585
 α,β -ethylenic derivs via isomerisation of α -acetylenic alcohols using Ti/Cu and Ti/Ag catalysts, 6253
 α,β -unsaturated-, conjugate additions in aqueous media, optimisation under ultrasound, 5369
 α,β -unsaturated-, conjugate addition of N-substituted organo(silyliminomethyl)copper, 355
 α,β -unsaturated-, reactions with indoles using clay as catalyst, 2577
 α -, derivs, nucleophilic substitution, multiple Hammett study, 4431
 α -olefinated derivs via treatment of azoalkenes with carbomethoxymethylene triphenylphosphorane, 5787
 β -di-, Co(II)chloride bistrisphenylphosphine alkylations, 1469
 addition to and generation of Z-dithiohex-3-ene-1,5-diyne, 4681
 addition to P-fluoro-ylides to give 2-fluorooxaphosphetanes that convert (depending on substituent at C-3 and C-4) into allylphosphonates or vinylphosphonates, 3663
 alkenyl and aryl halides with α,β -unsaturated carbonyl groups, Pd-catalysed cyclisation via intramolecular carbopalladation, 3903
 allylcarbonyl and allyl groups, Pd-catalysed selective deprotection in phosphate chemistry in presence of propargyl and propargyloxy carbonyl groups, 623
 and alkyl iodides and methyl vinyl ketone, Et₃B-mediated Reformatsky-type coupling, 1041
 asymmetric reduction with hydrosilanes catalysed by chiral bases, 89
 chemoselective alkylation and reduction of aldehydes or ketones, 3101
 copper hydride for conjugate reductions, synthesis of [(Ph)₃P]CuH], 3749
 di-, cyclic [2+3] Schiff-base condensation with tris(2-aminoethyl)amine to new series of cage molecules, 385
 heterocyclic β -dicarbonyl triacetic acid lactone and tetrionic acid, Pd-catalysed allylic C-alkylation, 581

hindered-, in planar quinones and flavones, ^{17}O NMR data, 2143
 N-benzyloxycarbonyl group, one-pot conversion into N-t-butoxycarbonyl group, 2983
 propargyl or propargyloxy carbonyl derivs of functional groups, Pd-catalysed hydrostannolysis and hydrostannation of alkynes, 619
 protonated simple-, acidity constants, literature data and indirect estimates, 5541
 reaction with 2-aza-pentadienyl anions, regioselectivity, 3647
 reaction with dithio-substituted cinnamyl lithium, test of HSAB principle, 5937
 via conversion of thioacetals, 5471

Carboxylation

carboxylation-decarboxylation sequence, new synthesis of 3(2H)-furanones, 5941
 O-, of alcohols, sulphur-assisted with CO in presence of DBU, 4767
 regioselective hydrocarboxylation of olefinic amines, characterisation of key intermediate, 6421

Carboxylic acids

1,6-heptadien-4-carboxylic acid derivs, regioselectivity in iodolactonisation, 1517
 2-(2-alkyl-indenohydrazino)acetic acids, synthesis of 1H-pyrazol-4-ols, 1341
 3-cyanobenzoic acid via selective conversion of 1,3-dicyanobenzene, 2589
 3-dehydroshikimic acid, specificity of *E. coli* shikimate dehydrogenase towards analogs of the acid, 6779
 4,5,8-trihydroxyquinoline-2-carboxylic acid, antibacterial pigment from *Dendrilla membranosa*, 2137
 5-(5,6,7,8-tetrahydro)5,5,8,8-tetramethyl-2-anthracenyl-2-furan and -2-thiophene carboxylic acids, route to aromatic retinoids, 4409
 (2S,4E,6R,8S)-8-hydroxy-2,4,6-trimethyl-4-nonenic acid, synthesis and syntheses of cyclodepsipeptides jaspamide and geodiamolide A and B, 1269
 α -alkoxymalonic acid, oxidative bisdecarbonylation with Cerium, 769
 α -hydroxy and α -keto acids, new prep via regioselective oxidative cleavage of 1,4-dioxenyl carbinols with pyridinium chlorochromate, 6261
 α -ketoacid decarboxylation, thiazolium catalysed, novel enzyme mimic, 6235
 α -phenylacrylic acids, β -disubstituted, catalytic asymmetric hydrogenation, asymmetric synthesis of carboxylic acids containing two vicinal chiral carbon centers, 5969
 β -hydroxyalkanoic acid derivs, prep via aerobic oxidative carbonylation of olefins, 4435
 (-)-abiatic acid, synthesis of diterpenoid (+)-taxodione, 5751
 (\pm)-abscisic acid, via application of asymmetric synthesis of 4-alkoxy-4-alkylcyclohexen-2-ones, 5339
 and alkyl bromides photoelectro-catalysed addition of vitamin B-12 to methyl 2-acetamidoacrylate yields 2-amino esters, 1601

and tetra- and penta-alkylated cyclopentadienyl ketones, prep, 5641
 and their benzophenone oxime esters, photodecarbonylative chlorination, 6287
 chiral 2-hydroxyacid benzoates, synthesis via chiral 2-epoxyalcohols, 2701
 chiral (w -1)-hydroxy acids, enantioselectivity of lipase-catalysed lactonisation to form diolides in non-aqueous media, 5583
 chiral complex of sorbic acid, resolving agent for an allylic alcohol and key intermediate for chiral syntheses of 4-hydroxy nonenal and coriolic acid, 3937
 (+)-clavam-2-carboxylic acid, total synthesis, 1609
 communic acids, biomimetic cyclisation to pimarane skeleton via organomercurial intermediates, 3713
 cyclic-, asymmetric ring opening with lipase in organic solvents, 1717
 cyclopropane carboxylic acids, α,β -substituted, asymmetric synthesis, 6979
 cyclopropane carboxylic acids, β -substituted, asymmetric synthesis, 6983
 (E)- α,β -unsaturated acids, stereoselective synthesis from C,0,0-tri(trimethylsilyl)ketene acetal and aldehydes, 4551
 formic acid, unusual reductions, 5701
 new degradation to functionalised nor-alkanes via acylcobalt salophen intermediates, 707
 non-enolisable-, alkyl lithium-induced decarboxylation, prep of stabilised carbanions, anion equivalent to Hunnsdieker reaction, 4505
 oxalic acid and glyoxylic acid via electrochemical reduction of CO_2 in water, 945
 p-methylcinnamic acid, doubly D-labelled, included in modified β -cyclodextrins, dynamic molecular motions of guest molecule, 1413
 phenylacetyloxymethylene, carboxyl protecting group removable with immobilised penicillin acylase, useful in benzyl penicillin chemistry, 4623
 pyridine carboxylic acids and esters, controlled regioselective oxidation with fluorine, 4389
 silicic acid and derivs, anomeric configuration, ^{13}C NMR, 6317
 stearic acid, microbial dehydrogenation of dithia-analog, 285
 succinic acid deriv, conformation by double ^{13}C -labelling, 757
 tartaric acid, prep of most biologically active insecticides, 1079, 1083
 tetrahalophthalic acids, chemoselective hydrolysis of nitriles, 6557
 (-)-trachelanthic acid, synthesis via application of diastereospecific addition of organometallics to (S)-2-alkoxy-1-(1,3-dithian-2-yl)-1-propanones, 3955
 unsaturated-, Ag-ion coupling of the diene and triene diolates, synthesis of octa- and dodeca-dienoic acids, 6181
 unsaturated hydroxy acids via cobalt carbonyl and phase transfer catalysis of vinyl epoxides, 1763

- unsaturated-, Pd-catalysed coupling of vinylic halides or triflates, synthesis of vinylic lactones, 6399
- Carboxylic acid anhydrides**
homophthalic-, base-induced intramolecular cycloadditions leading to polycyclic peri-hydroxy aromatic compds, 5943
maleic-, Wittig reactions, neighbouring group effects on regioselectivity, 6203
N-carboxyanhydrides of α -amino acids, prep using bis(trichloromethyl)carbonate, 5859
tetrahydrophthalic acid, chemoselective hydrolysis of amides, 6553
tetraphenylphthalic acid, pyrolysis, formation of 1,2,3-triphenylbenzopentalene, 6791
- Carboxylic acid halides**
 α -alkoxyacid chlorides, decarbonylation mediated by samarium diiodide, use in synthesis of 1,2-glycol monoethers, 4847
acid chlorides, coupling with functionalised organo-Cu reagents, direct formation of functionalised ketones, 4513
acid chlorides, reduction to aldehydes using hypervalent silicon hydrides, 1271
acid halides, alkyl halides and aldehydes, presence in reduction of nitrobenzene to aniline, 5083
acyl chlorides, Co-catalysed regioselective cleavage of oxiranes, 4985
acyl chlorides, enones, allylic halides and benzaldehydes, reaction with Cu and Ti derivs from transmetalation of 2-cyanoethylzinc iodide, 2395
allyloxybenzoic acid chlorides, double cyclisation, mediated by samarium diiodide giving cyclopropanols, 6105
- Carboxylic acid halogen derivatives**
 β -chloro acids and esters, synthesis via new Mukaiyama reaction, 1275
chlorodifluoroacetic acid derivs, Reformatskii-type reactions with fluorine containing organo-Zn reagents, 2943
chlorodifluoroacetic acid derivs, Reformatskii-Claisen reaction, synthesis of F-containing organo-Zn reagents, 3291
trifluoroacetic acid, behaviour with unsaturated 1,2-hydroxyiminoketones, 6805
- Carcinogens**
1-hydroxy- and 3-hydroxy-trans-7,8-dihydro-7,8-dihydroxy-benzo[a]pyrene, synthesis, 3513
acceptor substituted phenylnitrenes, formation via α -elimination under mild conditions, 1781
azo compds and hydrazines from α -diphenylphosphinoyl arylhydroxylamines, 1777
cyclopenta[*a*]phenanthrene derivs, new synthesis, 3207
dihydrotelocidin B-4, total synthesis, 6267
Ehrlich ascites carcinoma cells aminopeptidase B, total synthesis of natural inhibitor OF4949-III, 3227
nitrosamine derived diazenium ions, displacement of O- vs N-substituents by three divergent mechanisms, 2903
- phorboid cycloheptene synthesis via divinylcyclopropane rearrangement, complementary 1,4-stereocontrol, 6741
pyrrolizidine alkaloid with 11-membered dilactone, synthesis of optically active monocrotaline, 5139
- Catalysts and Catalysis**
by papain, one-pot synthesis of tripeptide from three single amino acid derivs, 2907
catalytic chemistry of metalloporphyrin, effect of axial ligand, synthesis of iron tetraphenylporphyrin with covalently-attached phenolate tail, 5345
cobalt a Schiff base chelates, catalysed oxygenation of (*E*)-4-stilbenols, 6629
cobalt carbonyl and phase transfer catalysis, of vinyl epoxides to unsaturated hydroxy acids, 1763
dimethyl- β -cyclodextrin bearing imidazoleethyl group, hydrolysis of nitrophenyl acetates, pH dependence and regioselectivity, 311
lipase-lipid complex as resolution catalyst of racemic alcohols in organic solvents, 5133
manganese tetraphenylporphyrin chloride and imidazole-, and acetic acid as proton donor, biomimetic electrochemical oxidation of alkanes to alcohols and ketones, 205
multistep catalysis by molecular oxygen in chloride free media in oxidation of olefins to ketones 2885
redox catalysts, use of iron bipyridine and phenanthroline complexes, indirect electro in situ regeneration of NAD and NADP⁺ for enzymatic oxidations, 3299
silica gel functionalised with amino groups, heterogeneous catalysis of Knoevenagel condensation, 2261
supported epoxidation catalyst for nucleophilic olefins, 971
Ti/Cu and Ti/Ag-, isomerisation of α -acetylenic alcohols to α,β -ethylenic carbonyl derivs, 6253
unsymmetrised and symmetrised DIOP analogs bearing *p*-dimethylamino group, synthesis and their rhodium complexes as more effective in asymmetric hydrogenations than DIOP, 4755
use of triphenylphosphine in tetrahydropyranlation of tertiary alcohols, 4583
- Membranes**
6-hydroxy-, precursors, synthesis via controlled diastereoselective [2,3]Wittig ring contraction, 3547
- Cephalosporins**
derived fungal metabolite, structure of AC107, 2101
derivs of-, Pd-catalysed coupling with unsaturated stannanes, new ligands for Pd chemistry, 5739
- Cerium**
catalysed iodination at C-5 of uracil nucleosides, 2855
ceric ammonium nitrate, reaction with 1,3-dithiane derivs of sterically crowded hydrindanones, prep of α,β -unsaturated ketones, 179
ceric ammonium nitrate, substituent directed regio- and stereoselective oxidative cyclisation of cycloalkenols, 1771
mediated Grignard reaction of functionalised esters and lactones, direct access to functionalised allylsilanes, 5009
oxidative bisdecarbonylation of α -alkoxymalonic acids, 769
- Cesium**
cesium fluoride and crown-ethers, combination, new anhydrous fluorinating systems, relative rate study, 4669
- Chalcones**
new dimer of-, from *Lophira alata*, 5797
- Chelation**
C-Sn bond, interaction with β -positive charge, 2551
chiral α -alkoxy-ketone/SnCl₄ chelate, X-ray analysis, 5881
hexadentate chelating agent based on 8-hydroxyquinoline, synthesis, 1351
stereochemistry of fluoride-catalysed aldol reaction on enol silyl ethers, another non-chelate transition state, 2207
- Chemiluminescence**
thermochemiluminescent label, prep, properties and use of xanthylideneadamantane 1,2-dioxetane, 3137
- Chirality and Chiral compounds**
1-chloroalkyl *p*-tolylsulphoxides, prep and short synthesis of optically active disparlure, 313
2-amino-3-butenols via cyclisation of 2-butylene dicarbamates catalysed by chiral ferrocenylphosphine-Pd complex, 99
2-methyl-1,2-hexanediols, obtained from 2-hexanone using 1,3-trans-oxathiane, 5535
3-oxa-carbacyclin precursors featuring asymmetric Horner-Emmons reaction, 1773
 α -sulphonylacetaldehyde, synthesis, 6775
 α -sulphinyl epoxides-, as precursors of chiral, functionalised homoallylic alcohols, 5929
 Δ^2 -isoxazolines, prep, 3555
acetoacetates, stereoselectivity in alkylation by racemic sec alkyl halides on solid support, 4615
acetylenic alcohols, synthesis, 2737
aldehydes, resolution and enantiomeric excesses via chiral imidazolines, 2675
allyl alcohols and (*S*)-1-phenyl-1,2-butadiene, prep and separation of diastereoisomers, use of 1-naphthylphenyl-methylsilyl group, 1355
allylic ethers with chiral substituent, asymmetric induction in [2,3]Wittig rearrangement, new entries to stereocontrol over three contiguous chiral centers, 4587
amides, simple prep, 6973
amplification by remote chiral functionality, CD of bilirubin exo-vinyl N-acetyl-L-cysteine adducts, 3507
auxiliaries, acetals, oxazolines and imidazolines in diastereoselective conjugate

- addition, 4411
- C₂ chirality of axially dissymmetric 3,5-octadiene framework, synthesis via Pd-catalysed twofold [3,3]-sigmatropic rearrangement, 1157**
- C-4 synthons, simple route to, use in differentially protected tartaric aldehydes, synthetic equivalents, 6163**
- cage-structure halogenated derivs and alicyclic and aromatic ketones, reduction potentials via cyclic voltammetry, 3935**
- central chirality, conversion into axial chirality in dehydrogenase, NAD(P)⁺-NAD(P)H model for chemical evolution, 3079**
- dimethyl 2-(4-t-butylcyclohexylidene)methylmalonate via Pd-catalysed asymmetric synthesis from *cis* and *trans*-allylic acetates, 2959**
- epoxides and allylic alcohols, synthesis by use of optically active *p*-tolyl sulphinyl group as chiral auxiliary, 2851**
- exo-7 derivs of 5-methyl-6,8-dioxabicyclo[3.2.1]octane, absolute configuration by VCD spectra, 745**
- host compds and inclusion complexes of pyridones, irradiation, enantioselective conversion into β -lactam derivs, 4299**
- imide enolates, stereoselective alkylation to give optically active α -alkylsuccinates, 6257**
- intermediates of pseudoguanilides, enantioselective approach, 147**
- iron acyls, synthesis, 4273**
- irumayoin, absolute structure of C₁₀-C₁₂ part, chiral synthesis of degradation product, 6449**
- itomanindoles A and B, methylsulphinylindoles from *Laurencia brongniartii*, 6091**
- methylpyroglutamate as chiral synthon, asymmetric synthesis of antihypertensive pyrrolidines, 3259**
- monocrotaline, a carcinogenic pyrrolizidine alkaloid with 11-membered dilactone, synthesis, 5139**
- multifunctional carbon compds, absolute configuration, 4727**
- optical purity determination of diols via camphanylboronic acid, chiral derivatising agent, 6063**
- optically active multifunctional carbon compds, absolute configuration, 4727**
- optically pure hexahydrobenzofuranone subunit common to milbemycin-avermectin macrocycles, synthesis, put under e0047 3415**
- oxazolo[2,3*a*]tetrahydroisoquinoline via isoquinolinium bromide, cyclisation, and its asymmetric alkylation and synthesis of (*S*)-(-) and (*R*)-(+)-salsolidines, 6949**
- p*-tolyl sulphinyl group as chiral auxiliary, use in synthesis of chiral epoxides and allylic alcohols, 2851**
- quaternary C-centers, construction using 3-substituted 5-trimethylsilyl-2-cyclohexenones; synthesis of (+)-cuparenone, 325**
- quinocarcin, ABE-ring system, chiral synthesis, 6301**
- stereocontrol of quaternary chiral center in cyclohexene systems, potential chiral synthons for vitamin D and related compds by enzymatic approach, 6961**
- synthons for elaboration of mevinic acid analogs, 4865**
- tetracoordinated iron bis-strapped chiral porphyrin bearing a nitrogen base on one handle, 5653**
- transfer from Si to C, use of optically pure cyclic silanes with binaphthalene chiral unit, 6199**
- vinyl sulphoxides with stereogenic center at allyl-C, conjugate addition to internal nucleophile, "intramolecular" double asymmetric induction, 3121**
- Chlorophyll**
- c of 17-nor-DPEP series, molecular fossils, structure, synthesis and geochemical significance, 371**
- derivs of-, isolation of meso-oxochlorins and ring opening of zinc meso-oxochlorins to give dihydrobiliverdins by two oxygen molecule mechanism, 5707**
- Chromatography**
- [4+2] cycloadditions, new method by adsorption on chromatographic adsorbents resulting in dramatic acceleration, 175**
- cyclic and acyclic chiral ketones, resolution as their oxime dinitrophenyl carbamates on chiral stationary phase derived from (*S*)-1-(6,7-dimethyl-1-naphthyl)isobutylamine, 4735**
- HPLC behaviour of the diastereomeric amino ester adducts derived from new chiral porphyrin with C₂ symmetry, 5271**
- simple resolution of diastereomeric α -hydroxycycloalkanone ketals, 4035**
- Chromanes**
- cis*-3,4-diarylisochroman-1-ones, stereocontrolled synthesis via diastereoselective reaction of benzaldehydes and α -lithio-2-cyanodiarlylmethane intermediates, 3777**
- Chromenes**
- 4-chlorochromenes and chroman-4-ones, simple route for synthesis, 3487**
- Chromones**
- 3-aroxy-2-(2-furyl)-, functionalised, synthesis and photoactivation, 69**
- functionalised 3-aroxy-1-2-(2-furyl)-chromones, synthesis and photoactivation, 69**
- homothamnone from 2,3-dimethyl-5,6,7,8-tetramethoxy-chromone, 735**
- homothamnone, synthesis, 2347**
- Chromium and compounds**
- 2-cumyladamantan-2-ol and its η^6 -Cr(CO)₃ complex, derived carbocations, unusual behaviour, 4787**
- (*n*-arene)Cr(CO)₃ complexes, regioselective functionalisation at C-1 of 3-oxygenated estra-1,3,5(10)-trienes, 3223**
- (*n*-arene)triacarbonyl complexes of-, in organic synthesis, 1,5-remote diastereoselection, 6271**
- aryl carbene complexes of-, reaction with 1-hexyne, formation of unusual FDiels-Alder cycloaddition products, 2513**
- (CH₃Cr), Cr(CO)₃, induced rearrangement of 1-phenyl-indene to 3-phenyl-indene, 3489**
- chlorochromate reagents, oxychlorination of alkenes, prep of α -chloroketones and competition by substituent-directed oxidation, 6707**
- CrCl₃, mediated stereoselective conversion of aldehydes into 8-bromovinylloxiranes, 6107**
- CrO₃, catalysis of oxidation with *t*-butyl hydroperoxide, alkynes to conjugated acetylenic ketones, 2321**
- furan carbene complexes of-, reaction with alkynes, synthesis of cyclopentanones, 3403**
- indoxyltriacarbonyl-, and indoline triacarbonyl-, complexes, suppression of neopentyl rearrangement and opening of indole ring, 103**
- Circular dichroism**
- bilirubin *exo*-vinyl N-acetyl-L-cysteine adducts, amplification of optical activity by remote chiral functionality, 3507**
- studies and prep of triterpene lactones of Lupane series, 5807**
- VCD spectra of *exo*-7 derivs of 5-methyl-6,8-dioxabicyclo[3.2.1]octane, 745**
- Cleavage**
- 1,2-epoxides, chemo- and regioselective reductive opening via free radical reaction, 819**
- 2-azetidiones, anodic dearylation, 1497**
- 2-pyrazolines, application to lactamisation and formylation of 1,3,6H-thiazines, 6249**
- α -bis(methylthio)methylenealkyl cyclopropyl ketones, acid catalysed ring opening, intramolecular alkylation approach to substituted cyclopentanones, 2111**
- α -hydroxy ketones and 1,2-glycols oxidative cleavage with Jones reagent, 6403**
- and transannular formation of isoxazolines, synthesis of iminomethano-dibenzo[a,e]-cyclooctenes, 6985**
- C-C bond and C-H bond-, and cyclopolymerisation, alkali-metal induced in 1,5-hexadienes, 3929**
- C-C bond heterolytic-, photolysis of N,N-dimethyl-2,2-diphenylethylamine in MeOH, 431**
- chiral acetals, TiCl₄ induced ring opening, route to aryloxy and alkylxypropanolamines β -adrenergic blocking agents, 2955**
- chlorophyll derivs, isolation of meso-oxochlorins and ring opening of zinc meso-oxochlorins to give dihydrobiliverdins by two oxygen molecule mechanism, 5707**
- cyclic acid anhydrides, asymmetric ring opening with lipase in organic solvents, 1717**
- cyclic ethers, ring opening by allylic anions, boron trifluoride promoted reaction, 5939**
- cyclic β -halogeno ethers, ring fission with samarium diiodide, synthesis of (*E*)- and (*Z*)-enynols, 6517**
- cyclopropenes, 3-substituted, stereoselective ring opening and intermolecular trapping of derived vinylcarbenes, 6149**
- epoxides, oxidative ring opening,**

- prep of α -ketols, 2163
epoxides, selective ring opening with silicon tetrafluoride, prep of fluorohydrins, 4101
esters with bis(tributyltin) oxide, application to deprotection of POM penicillanate esters, 6893
glycisidic bond of amphoterin B with [Al(Hg)] or DDO, 447
glycidyl tosylate, ring opening with 1-hexadecanol, enantioselective synthesis of platelet activating factor and its enantiomer, 4393
hydrostannolytic-, Pd catalysed, of propargyl or propargyloxy carbonyl derivs of functional groups and hydrostannation of alkynes, 619
intramolecular ring-, and synthesis of 2-oxetanones, 6573
isoxazolidines, oxidative ring opening, syntheses of β -amino ketones and β -amino acid esters from sec amines, 5949
N-aryl-2-oxazolidinones, ring opening by anhydrous alkoxide, prep of N-(alkoxyethyl)-2,6-disubstituted anilines, 5095
of C_{sp}-Y π -bond, in reaction of aldehydes and ketones with dicyclopentadienylyltriium chloride, 6931
oxiranes, regioselective cleavage with acyl chlorides, Co-catalysed, 4985
oxiranes, ring-opening by silyl-substituted allyl anions, a regiochemical chameleon, 4281
pinacol-, using iron(III)-trisphenanthroline complexes, 3635
protuberberines, oxidative C-N bond fission followed by intramolecular recyclisation in cell cultures of Corydalis incisa, formation of benzo[c]phenanthridines, 6457
radical-induced-, of ketoperoxides, 955
reactive phosphates with polymer-bound iodosobenzoate reagents, 2433
reductive-, of t-butylidimethylsilyl ethers with NaH, 6161
regiospecific oxidative-, of 1,4-dioxenyl carbinols with pyridinium chlorochromate, new prep of α -hydroxy and α -keto acids, 6261
siloxycyclopropanes, allylative ring opening by silver fluoride and allylic chlorides, prep of δ , ϵ -unsaturated ketones, 6137
spiroacetals derived from 1-menthone, selective ring opening, enantiodifferentiating functionalisation of meso-1,3-diols, 3097
under neutral conditions of protecting groups incorporating a 4-pentenyl acetal moiety, 6549
vinyl cyclopropanes, ring opening with p-toluenesulphonyl iodide, 4173
- Cobalt and compounds**
acylcobalt salophen intermediates in degradation of carboxylic acids to functionalised nor-alkanes, 707
alkylation of pentane-2,4-dione, dual mechanistic pathway via its Co(II) complex, 1465
and iron porphyrin perchlorates, reaction with trimethylsilyldiazomethane, 5677
catalysed regioselective cleavage of oxiranes with acyl chlorides, 4985
cobaloxime mediated radical alkyl-nitroalkylanion cross coupling, 6545
cobaloxime radical chemistry, alkyl-alkenyl cross coupling, 167
cobaloxime-mediated radical alkyl-alkenyl cross coupling, effect of remote ligand substituent on premature β -H elimination, 6037
cobalt a Schiff base chelate, catalysed oxygenation of (E)-4-stilbenols, 6629
cobalt-carbonyl complexes of peptides as IR markers, 5649
cobalt chloride bistrisphenylphosphine cocatalysed alkylations of β -dicarbonyl compds, 1469
cobalt Schiff base complex-oxygen system, catalytic dehydrogenation of sec amines, 4115
- Coenzymes**
chiral 1,4-dihydropyridine (NADH-mimic), stereoselective reduction of prochiral ketones and imines, 5617
enzyme inhibitors, synthesis of 2'(S),3'(R),5'-trihydroxypentyladenine, 1107
HMG-CoA reductase inhibitor, synthesis, 929
lampteroflavin, bioluminescent compd from Lampteromyces japonicus, 1169
NAD and NADP⁺, indirect electro in situ regeneration for enzymatic oxidations using iron bipyridine and phenanthroline complexes as redox catalysts, 3299
NAD to NADH, bioelectrocatalytic reduction on diaphorase modified electrodes, 1551
thienamycin, enantioselective synthesis of key intermediate by chemicoenzymatic approach, 1057
- Complexation**
alkenes, reactions with ArSCl, MeCO₂H, Ag, or HgCl₂, correlations of IP's vs relative reactivities or formation constants, steric dependence of complexation reactions, 6207
anion complexing agent, new type 12-silacrown-3, synthesis and transport properties, 297
ATP to synthetic [15]-N₃, macrocyclic polyammonium receptor, 6231
crown ethers with hydrazine moiety, synthesis, 5589
optical resolution of propionic acid-, butyric acid- and 4-hydroxycyclopent-2-en-1-one derivs of new chiral host compd, 10,10'-dihydroxy-9,9'-biphenanthryl, 1807
- Complexes**
(1-azabutadiene)tricarbonyliron-, formation of pyrrole, 1425
2-cumyladamantan-2-ol and its η^6 -Cr(CO)₃ complex, derived carbocations, unusual behaviour, 4787
(η -arene)Cr(CO)₃, selective functionalisation at C-1 of 3-oxygenated estra-1,3,5(10)-trienes, 3223
(η -arene)tricarbonyl chromium-, in organic synthesis, 1,5-remote diastereoselection, 6271
(π -allyl)Pd(II)(quinone)-, involved in Pd-catalysed 1,4-diacetoxylation of conjugated dienes, 2243
alkylation of pentane-2,4-dione, dual mechanistic pathway via its Co(II) complex, 1465
- aryl chromium carbene-, reaction with 1-hexyne, formation of unusual Diels-Alder cycloaddition products, 2513
bis(diphenylphosphino)-methane-, of Pt, catalysis of C-S bond formation, 4477
butadiene-iron tricarbonyl series, synthesis and prep functionalised epoxide alcohols, 2449
carbene-, non-stabilised, in situ generation via intramolecular acetylene insertion, new two-alkyne annulation and new prep of γ -keto esters, 415
carbene-, synthesis of donor-acceptor substituted cyclopropanes, 2315
chiral ferrocenylphosphine-gold-, catalysed asymmetric synthesis of threo- and erythro-sphingosines via asymmetric aldol reaction of α -isocynoacetate, 239
chiral ferrocenylphosphine-gold-, catalysed asymmetric aldol reaction of α -isocynoacetamides with aldehydes 6321
chiral ferrocenylphosphine-gold-, catalysed asymmetric aldol reaction of α -isocyno-carboxylates with paraformaldehyde, asymmetric synthesis of α -alkylserines, 235
chiral ferrocenylphosphine-Pd-, catalysed cyclisation of 2-butylene dicarbamates, asymmetric synthesis of optically active 2-amino-3-butenols, 99
chiral-, of sorbic acid, resolving agent for an allylic alcohol and key intermediate for chiral syntheses of 4-hydroxy nonenal and coriolic acid, 3937
chromium tricarbonyl-, of 17 β -(t-butylidimethylsilyloxy)-3-methoxyestra-1,3,5(10)-triene, reaction with Li-anion of acetonitrile, 1135
cobalt Schiff base complex-oxygen system, catalytic dehydrogenation of sec amines, 4115
cobalt Schiff base-, catalysis, asymmetric induction in oxygenation of styrene, 6309
cobalt-carbonyl-, of peptides as IR markers, 5649
crown-potassium enolate-, conjugate additions, 6943
diazidobenzo-30-crown-10 derivs as receptors for diquat, 1569
diocalthexacarbonyl-, of internal alkynes, reaction with olefins to give cyclopentenones, 999
dienyliron-, alkylation of silyl ketene acetals, application to formation of quaternary C-centers, 869
electro donor-acceptor-, unusual cycloaddition of cage ketone with tetracyanoethylene, 5779
Fischer carbene-, and 1,3-dienes, furan chromium carbene-, reaction with alkynes, synthesis of cyclopentanones, 3403
indoxyltricarbonylchromium and indoline tricarbonyl chromium-, suppression of neopentyl rearrangement and opening of indole ring, 103
iron and zinc bleomycin, direct comparison of oxygen transfer, 6413
iron bipyridine and phenanthroline-, use as redox catalysts, indirect electro in situ regeneration of NAD and NADP⁺ for enzymatic oxidations,

- 3299
 iron carbene-, cationic cyclisation, 4921
 iron(III)trisphenanthroline-, use in pinacol cleavage, 3635
 metal carbene-, reaction with alkoxy-substituted esters, synthesis of spiroacetals via methanolysis and cyclisation of intermediates, 3357
 metal-, catalysed olefin oxidation, via application of synthesis of optically active dioxo-cyclam macrocycle derived from L-phenylalanine, 5091
 Mg²⁺-, of ATP and ADP, tertiary structures, synthesis of lipophilic ATP isosteres, 2615
 molecular-, between a diazadibenzo-30-crown-10 deriv and diquat, solid state structure, 1573
 monoisopinocampheylborane-N,N,N',N'-tetramethyl-ethylenediamine-, X-ray structure and asymmetric hydroboration, 3385
 new chiral peralkyl-AMPP Rh-, catalysis of asymmetric hydrogenation of activated ketones, 3675
 Ni-, of chiral cyclams, epoxidation of alkenes, 877
 Pd and salicylidene ethylene diamine, prep and selective hydrogenation of alkynes in presence of alkenes and alkenes in presence of other functional groups, 5545
 Pd-phosphine-, catalysed carbopalladation, synthesis of carbocyclic and carbopolycyclic compts, 2915
 PdCl₂(PhCN)₂-SnCl₄ system, use, diastereoselectivity in carbonyl allylation by allylic carbonates, 3563
 PhIO.HBF₄-, and silyl enol ethers, use in new C-C bond formation in Alder reactions, 3703
 rhodium-, of unsymmetrised and symmetrised DIOP analogs bearing p-dimethylamino group, more effective in asymmetric hydrogenations than DIOP, 4755
 TMQ, intermolecular CT-interaction with monocyclic glycol ether carrying two terminal electron-donor groups, effect of potassium perchlorate, 933
 ternary-, model for thymidylate synthase reaction which is at same oxidation state as the natural complex, formation of exocyclic methylene intermediate from this model, 5445
 TiCl₄-Mg-, promoted reductive coupling of α,β -enone N,N-dimethylhydrazones or oximes, new pathway to 5-alkenyl- Δ^1 -pyrrolines, 3263
- Configuration**
 2° alcohols, conversion to their chlorides with retention of configuration, 3053
 2° alcohols, conversion to their chlorides with retention of configuration, 3053
 absolute structure of C₁₄-C₂₂ part of irumaycin, chiral synthesis of degradation product, 6449
 absolute-, and enantioselective synthesis of (-)-pulo'pone by asymmetric intramolecular Diels-Alder reaction, 5885
 absolute-, by VCD spectra, exo-7 derivs of 5-methyl-6,8-dioxabicyclo[3.2.1]octane, 745
 absolute-, of chiral isouquinolidines, 4423
 absolute-, of cytotoxic cebranolides, consideration of Mosher's method, 4731
 absolute-, of natural monoalide and synthesis of (S)-monoalide diol, 2401
 absolute-, of optically active multifunctional carbon compts, 4727
 absolute-, of sanadaol and dictyodial, 5945
 and X-ray crystal structure of [(phenylsulphonyl)isopropyl]lithium-diglyme₂ and [(α -phenylsulphonyl)- α (methyl)-benzyl]lithium-diglyme₂, 1259
 anomeric-, of silicic acid and derivs, ¹³C NMR, 6317
 at 1'-position of 6-deoxy-3-O-(1-phenylalkyl)-1,2-O-isopropylidene-D-allofuranoses, 5297
 carbohydrate derived lactols, unusual reactions with stabilised phosphorus ylides, specific intramolecular OH group effect leads to high selectivity, 6823
 correct anomeric-, of 2,3-unsaturated C-glucopyranosides, guideline to assignment, 5549
 dilactam of L- α,γ -diaminobutyric acid and D-glutamic acid, a β -turn template, prep of derivs of 3(S)-amino-10(R)-carboxy-1,6-diaza-cyclodeca-2,7-dione, 5057
 geometric-, of allylic and vinylic groups, retention, reactions of allylic and vinylic sulphoxides with Grignard reagents, ligand coupling through α -sulphurane, 4445
 of newly created asymmetric center in dioxolane, synthesis of chiral dioxolanes from (-)-shikimate and β -ketoesters, 2D1H and ¹³C NMR, 4555
 plasmodial pigment fuligorubin A, total synthesis, use of 4-diethylphosphone-3-oxobutane-thioate for tetramic synthesis, 5829
 polyene macrolide nystatin A₁, OH groups in C-1 to C-10 fragment are all *syn*, 2827
 unusual long chain ketones of algal origin, 2599
- Conformation**
 2-aryloxytetrahydropyrans, effect of p-substituents, 471
 3-azabicyclo[3.2.2]nonanes, conformational equilibrium isotope effect, 3551
 12,12,21,21-tetrauterio-1,4-dioxal[4.3.3](1,3,5)cyclophane, 6275
 and spectroscopic properties of spirocyclic oxaziridines, 6407
 and stereochemical analysis, group selective reduction of acetals related to ANSA chain of streptovaricins, 4085
 and structure of alkoxyfluoroalkyl radicals from solid state ESR spectra, 4611
 by double ¹³C-labelling of succinic acid deriv, 757
 changes in 2,11-diselna[3.3]-metacyclophane determined by variable temp ⁷⁷Se NMR, 5587
 chiral dienes, conformational model for asymmetric Diels-Alder reactions, 5225
 conformational vs electronic control in iodolactonisation of 1,6-heptadien-4-carboxylic acid derivs, 1517
 conformationally restricted 1,4-thiazanes, analogs of peptido-
- leukotrienes, 6533
 consequences in intramolecular cyclopropanation within small bicyclic systems, 269
 disaccharide-, approach via interglycosidic ¹³C-¹H coupling constants, 199
 immunosuppressive agent cyclosporin A, studies of cyclophilin binding domain of CsA, 6577
 influence of lifetime of a 1,4-cycloheptadiyl as determined by cyclopropylcarbonyl "free radical clock", generation of triplet spiro[2.6]nona-4,7-diyl diradical by N-extrusion from 6,7-diazaspiro[bicyclo(3.2.2)-non-6-ene-2,1'-cyclopropane], 5637
 peptide functionalised diacylaminoepindolidiones, ¹H NMR evidence for β -sheet formation, 5077
 preferred-, and peptide conjugates of (2S,5S,8S,11S)-1-acetyl-1,4-diaza-3-keto-5-carboxy-10-thia-tricyclo[2.8.0,⁴]tridecane, studies of templates and α -helix formation, 4931
 preferred-, in soln of each α and β (1-6)linkage of oligomannoses, ¹H differential repaxation and Noe using chirally deuterated sugars, 4457
 rigid glutamic acid analogs, chemoenzymatic synthesis, 6109
 solution and solid state-, of 2-phosphoryl substituted 1,3-oxathianes, 6801
 solution -, about C5-C6 bonds at (1-6)-linkages of 0-4,0-6-branching tri-D-glucopyranosides, effect of 0-4 linked residues, 4461
 stable and reactive-, of N-enoyl-bornane-10,2-sultams in absence of Lewis acids, asymmetric 1,4-hydrate additions, 3559
 studies, (2S,5S,8S,11S)-1-acetyl-1,4-diaza-3-keto-5-carboxy-10-thia-tricyclo[2.8.0,⁴]tridecane, synthesis of prolyl-proline-derived peptide-functionalised templates for α -helix formation, 4935
 studies by dynamic NMR, steric barrier and π -barrier to rotation in simple enamines, diethylaminocyclohexenes, 3141
 tetraacordinated iron bis-strapped chiral porphyrin bearing a nitrogen base on one handle, 5653
- Copper**
 α -alkoxyorganocuprates, *syn* selective homoaldol chemistry and synthesis of aryloxides of-, reactivity, effect of N-donors, synthesis of thiocarbonates, 827
 carbocupration of 1-alkynes by branched alkyl heterocuprates(RCuMg₂) in presence of excess MgBr₂, 4313
 catalysed phenylation of indoles by triphenylbismuth bis-thrifluoroacetate, 1115
 copper hydride for conjugate reductions, synthesis of [(Ph₃P)CuH], 3749
 cuprate addition to 5-substituted cyclopentenones, theoretical evaluation of stereoelectronic diastereofacial selectivity, 443
 cuprate additions to 5-methoxy-2-cyclopentenones, diastereofacial selectivity, 439
 cyanocuprates, higher order derived from 2-lithiated furans,

- scope, limitations and synthetic utility, 3045
- cyanocuprates, higher order, unexpected effects on reactions with Me₂Si-X, 6677
- epoxyalkyl-Cu reagent, direct formation from activated Cu and epoxyalkyl bromides and their intramolecular cyclisations, 6753
- mediated selective transport of α -amino acids across bulk liquid membrane using chiral lipophilic ligand as carrier, 4967
- N-substituted organo(silyl-iminomethyl)copper, conjugate addition to α,β -unsaturated carbonyl compds, 355
- organo reagents, 1,6-addition to 3-ethynyl-2-methyl-2-cyclopentenone, 5851
- organo reagents, functionalised, coupling with acid chlorides, direct formation of functionalised ketones, 4513
- organocuprates, reactions using R₂PCu(CN)LiNa, 893
- presence of-, in thermolysis of benzhydrazones, 811
- Ru(CN)ZnI₂BF₄, 1,4-additions to trisubstituted enones, new BF₄ promoted cyclisation, 6693
- Ru(CN)ZnI₂BF₄, reaction with aldehydes to give polyfunctional sec alcohols, 3887
- silyl-cupration of allene, new route to silylated synthons, 1825
- stannyl cuprates, coupling of vinyl and aryl triflates providing regioselective access to vinyl lithiums, 4795
- Coumarins**
- 3,4-disubstituted-, synthesis via conjugate additions on α -phenylthio- α,β -unsaturated oxazolines, 5901
- 4-aryl iso-, via conversion of substituted indenones by anodic oxidation, 543
- linear acylated-, geijerin and dehydrogeijerin, total synthesis via regioselective Fries rearrangement of methyl 3-(2-acyloxy-4-methoxyphenyl)-propanoates, 1311
- sesquiterpenoid-, assafoetidin and ferroclicin from *Ferula assafoetida*, 1557
- with dihydrofuryl side chain via rearrangement of murrangatins, 6153
- Coupling reactions**
- Ag-ion-, of diene and triene diolates of unsaturated carboxylic acids, synthesis of octa- and dodeca-diendiolic acids, 6181
- alkyl tertio-alkyl ethers, iodine mediated synthesis, 2445
- alkyl-alkenyl cross-, via cobaloxime radical chemistry, 167
- allyl halide, Pd-catalysed-, with CO and 2-silyl-4-stannylfuran, synthesis of manoalide and secmanoalide, 1173
- aryl-aryl cross-, connection to directed ortho metallation, regioselective synthesis of phenanthrols, 5459
- aryl-aryl cross-, directed metallation connection, regioselective synthesis of phenanthridines, phenanthridinones and biphenyl alkaloid ismine, 5463 benzylic Grignard reagents,
- reactions with benzylic aryl sulphoxides, sensitive nature of ligand coupling and pseudorotation to electronic effect of substituent-ligand coupling, 4441
- C-C bond, synthesis via Pd conversion of tellurides Rⁿ-Te-R into coupled R-R, and metallic tellurium, 3533
- Cadiot-Chodkiewicz-, Pd-catalysed, of acetylene and diacetylene with 1-halogenallenes to give 1,2,6,7-octatetraene-4-ine, 1,2,8,9-decatetraene-4,6-diene and 2,4,6-octatriene, 3651
- catalysed carbonylative symmetrical-, of siloxy-cyclopropanes, synthesis of 4-keto pimelates, 1541
- cobaloxime-mediated radical alkyl-alkenyl-, prep of ammonium 3-deoxy-D-manno-2-octulosonate from D-mannose, 3191
- cross-, and regioselective synthesis of 1,2-borostannyl-1-alkenes, 261
- cross-, electrochemical, of organic halides, trichloromethylation and related synthesis of gem-dichloro compds, 1699
- cross-, of aryl halides, use of NiCR₄-bpy-KI, 545
- cross-, Pd-catalysed, synthesis of 2- and 4(5)-(2-pyridinyl)-imidazoles, 5013
- cross-, radical alkyl-nitroalkylation, cobaloxime mediated, 6545
- cross-, transition metal-catalysed, synthesis of azafluorenone alkaloids, 2135
- cross-linking proteins and/or nucleic acids with 2,2'-bis(methoxymethylene)-2,2'-sulphonyldiacetonitrile, 5847
- Et₂B-mediated Reformatsky-type coupling of alkyl iodides, methyl vinyl ketone and carbonyl compds, 1041
- functionalised organo-Cu reagents with acid chlorides, direct formation of functionalised ketones, 4513
- Grignard aryl reagents in presence of 2,3-dichloropropene, 1293
- Grignard reagents, reactions with allylic and vinylic sulphoxides, retention of geometric configuration of allylic and vinylic groups; ligand coupling through α -sulphurane, 4445
- iodonaphthalenes with naphthoxide ions under S_N1 conditions, synthesis of unsymmetrical biunaphthyl derivs, 1705
- isocyanates, Cp₂TiCl₂-catalysed reaction with Grignard reagents, formation of reduction-coupling product of isocyanates, 651
- isocyanide dichlorides, N-substituted, with alkynyltin compds, Pd-catalysed, new synthesis of dialkynylketones, 5379
- Ni-catalysed-, of Grignard reagents with 6-alkyl-3,4-dihydro-2H-pyran, stereo-selective synthesis of trisubstituted alkenes, 2353
- organocuprates, reactions using R₂PCu(CN)LiNa, 893
- organomercurials with vinylic oxetanes, Pd-catalysed, synthesis of homoallylic alcohols, 5069
- Pd-catalysed-, between cephalosporin derivs and unsaturated stannanes, new ligands for Pd chemistry, 5739
- Pd-catalysed cross-, reaction of 1-bromo-1-phenylthioethene or (E-or(Z))-2-bromo-1-phenylthio-1-alkenes with 9-alkyl-9-BBN, stereoselective route to alkenyl sulphides, 3983
- phosphite-, prep of phospholipids, 3631
- radical alkyl-alkenyl-, cobaloxime-mediated, effect of remote ligand substituent on premature β -H elimination, 6037
- reductive-, of (R)-(+)-carvone and (+)-camphor by TiCl₄-Mg reagent, X-ray structure of (+)-(1S,5R,1'S,5'R)-carvone pinacol, 5925
- reductive-, of α,β -enone N,N-dimethylhydrazones or oximes promoted by TiCl₄-Mg complex, new pathway to 5-alkenyl- Δ^1 -pyrrolines, 3263
- reductive-, of α,β -enones promoted by Mg and Mg-MgBr₂, 3679
- sequential cross-, stereospecific synthesis of (1E,3Z)- and (1E,3E)-1-trimethylsilyl-1,3-dienes, 3705
- terbinafine, synthesis, Pd-catalysed vinyl iodide-ethynylstannane coupling, 1509
- trans-1,2-bis(tri-n-butylstannyl)ethylene with aromatic halides, Pd-catalysed, synthesis of substituted trans- β -bromostyrenes, 2783
- trans-1,2-bis(tri-n-butylstannyl)ethylene with aromatic halides, Pd-catalysed, synthesis of substituted trans- β -bromostyrenes, 2783
- vinyl and aryl triflates with stannyl cuprates providing regioselective access to vinyl lithiums, 4795
- Crown ethers**
- 4,13-diaza-18-crown-6, N,N-bis(substituted)derivs with pi-donor group sidearms, correlation of thermodynamics and solid state structures, 3025
- and cesium fluoride, combination, new anhydrous fluorinating systems, relative rate study, 4669
- bifluorenylidene-hinged-, synthesis by intramolecular desulphur-dimerisation of bridged bis-fluorenone-dithioacetals, 5131
- containing hydrazine moiety, synthesis, 5589
- diazadibenzo-30-crown-10 deriv and diquat, molecular complex between, solid state structure, 1573
- diazadibenzo-30-crown-10 derivs as receptors for diquat, 1569
- diazadibenzo-30-crown-10 disulphonamide, solid state structure, 1575
- homolytic substitution of 2-methylquinoline, 5037
- triazas- and tetraaza-crown compds, N-alkyl-substituted, synthesis, 3521
- pyridino-armed diaza-crown ethers for specific transport of "transition metal cations", 569
- Cryptands**
- diazacoronands, N-methylation, application of ultrasound, 959
- lipophilic [2.2.2]-cryptand and in 18-membered ring steroidal lariat ethers, aggregation behaviour, 4065
- three dimensional-, synthesis and properties, 1789

- tris(2-aminoethyl)amine, cyclic [2+3] Schiff-base condensation with dicarbonyls to new series of cage molecules, 385
- Cumulenes**
bromo[3]cumulenes, regioselective synthesis of haloynes, 411
- Cyanides**
8-alkoxy imidoyl-, synthesis from acetals, reaction of isocyanides, 6773
promoted Michael reaction, use of aminonitrile as enamine equivalent, 6831
trimethylsilyl-, Pd and Ni-catalysed reactions with methylenecyclopropanes, 3979
- Cyano compds**
3-cyanobenzoic acid via selective conversion of 1,3-dicyanobenzene, 2589
cyanocuprates, higher order derived from 2-lithiated furans, scope, limitations and synthetic utility, 3045
cyanocuprates, higher order, unexpected effects on reactions with Me₂Si-X, 6677
exposed amino, azido, bromo or cyano groups in functionalised siloxy-anchored monolayers, 5593
tetracyanoethylene, unusual cycloaddition with cage ketone by irradiation of electro donor-acceptor complex, 5779
tricyanomethanimine, a new azacyanocarbon C.N., prep, 1235
- Cyanohydrins**
and acylolins, optically active, bio-organic synthesis, 4485
stereoselective cyanohydrin-forming reactions of chiral α-amino aldehydes, 3295
- Cyclams**
dioxo-cyclam macrocycle, optically active, derived from L-phenylalanine, application of synthesis to 5091
- Cyclic ketones**
1,2-cyclohexanediones, new aromatisation, synthesis of 3-arylcatechols, 73
1,4-naphthoquinone derivs, Diels-Alder reactions with dienes, changes in stereoselectivity and rate by hydrophobic solvents and by bovine serum albumin, 3347
1-cyclobutenyl-, Diels-Alder and ring enlargement reactions, prep of 1-acetyl-1,3,5-cyclooctatrienes, 6283
1-methyl-1-aza-4-cyclanones, Hofmann-like fragmentation induced by N-acylation, use in synthesis of 2-aza-decalones and 2-aza-hydrindanones, 3303
1-methyltricyclo[2.2.2.0^{2,5}]-octane-3,5-dione desymmetrisation and synthesis, 269
2-(2-furyl)-cycloalkanones, synthesis, application to benzo[*c*]phenanthridone ring formation, 3243
2-(trimethylsilyl)methyl-cycloalkanones, one-carbon ring enlarged, via rearrangement of 1-(trimethylsilyl)-methylcycloalkane carboxaldehyde, 1815
2-alkyl-3-carboethoxycyclopentadienones, generation and reactions, 2365
2-azabicyclo[2.2.2]octan-2-ones and 2,3,4-substituted cyclohexanones, diastereo-selective synthesis, Diels-Alder reactions of 2-azadienes, 4573
2-benzoyloxy-3-pentanone-SnCl₄ adduct, geometry of monomeric chiral α-alkoxy ketone chelate, 5881
2-cyclohexene-1-one and 2-cyclopentene-1-one, fixed E,Z-titanium and zirconium dienolates, aldol reactions with chiral aldehydes, 1661
2-cyclopentenone, Ni-catalysed codimerisation with methylene-cyclopropanes in presence of triethylborane, prep of 6-methylene-bicyclo[3.3.0]octan-2-one, 4539
2-vinylcyclobutanones via m-chloroperbenzoic acid oxidation of allylidene cyclopropanes, 27
2,4,6-triisopropylbenzophenones, solid state photocyclisation, 3087
2,4,6-triisopropylbenzophenones, solid state photocyclisation, 3087
2,5-cyclohexadien-1-ones via improved conversion of 3,3-disubstituted 1,4-cyclohexadienes, 3907
2,5-cyclohexadiene-1-ones, intermolecular [2+2] photocycloadditions to alkenes, 6881
2,5-cyclohexadienones, solid state photorearrangement, 3091
2,5-cyclohexadienones, solid state photorearrangement, 3091
3-ethynyl-2-methyl-2-cyclopentenone, 1,6-addition of organo-Cu reagents, 5851
3-hydroxycyclohexanones via carbocyclisation of aminodeoxyhex-5-enopyranosides, 6589
4-alkoxy-4-alkylcyclohexen-2-ones, asymmetric synthesis, application towards synthesis of (+)-abscisic acid, 5339
4-alkoxy-4-alkylcyclohexen-2-ones, asymmetric synthesis, application towards synthesis of (+)-abscisic acid, 5339
4-alkyl-4-4-methoxyphenyl)-cyclohex-2-en-1-ones, synthesis, Scelerium alkaloid O-methyljoubertamine, 5483
4-alkyl-4-alkoxy-2,5-cyclohexadienones, photorearrangement, synthesis of 4-(alkyldimethoxy methyl)-cyclopent-2-en-1-ones, 1103
4-substituted-4-hydroxy-3-cyclobuten-1-ones, photolysis, new route to butenolides from 4-hydroxycyclobutenones, 3529
4,5-disubstituted 2-cyclopentenones, new route via conjugate addition to 5-phenylsulphonyl 2-substituted 2-cyclopentenones, 4189
5-arylbicyclo[3.2.0]heptan-6-ones, reactions, intramolecular cycloadditions of arylketenes with alkenes, 3175
5-methoxy-2-cyclopentenones, cuprate additions, diastereofacial selectivity, 439
5-trimethylsilyl-2-cyclohexenones, 3-substituted, construction of chiral quaternary C-centers, synthesis of (+)-cuparenone, 325
8-membered ring di- and trienones in a crystalline inclusion complex, control of photoreactions with optically active 1,6-di(α-chlorophenyl)-1,6-diphenylhexa-2,4-diyne-1,6-diol, 653
α-bis(methylthio)methylenealkyl cyclopropyl ketones, acid catalysed ring opening, intramolecular alkylation approach to substituted cyclopentanones, 2111
aminobicyclo[3.2.0]heptanones and aminonorbornenones from methylacrylate or acrylonitrile and captodative dienes, [2+2] and [4+2] cycloadditions, 1139
benzophenone benzoylhydrazone, derived anion, reactivity in presence of electrophiles, 3581
bicyclic enones, optical resolution using *trans*-4,5-bis(hydroxydiphenylmethyl)-2,2-dimethyl-1,3-dioxacyclopentane and host guest complex formation, 551
bicyclo[2.2.2]octanones, prep, 5241
bridged cyclohexenediones and vinylcyclooctanediones, photolysis, no formation of ethylenedione, 6641
cage ketone, unusual cycloaddition with tetracyanoethylene by irradiation of electro donor-acceptor complex, 5779
camphor, dissolving metal reduction, prep of dimeric products, 2527
cycloalkanone, selective reduction using aluminium amalgam, 525
cyclobutanone, stereospecific photo ring expansion, total synthesis of muscarines, 159
cyclohexanones, reaction with Ph₃P and KCl₄ in acetonitrile to give 1,1-dichloromethylene compds, 3003
cyclopentanones via use of 1-(2-ketoalkyl)cyclopropanols, cyclopentanone annulation, 1243
cyclopentanones, ring expansion to 7-membered rings, 1733
cyclopentanones, synthesis via reaction of furan chromium carbene complexes with alkynes, 3403
cyclopentanone derivs, route via Pd-catalysed cyclic acylmetalation of allylic electrophiles, 6745
cyclopentanone formation via an allene oxide, 5613
cyclopentenones, 5-substituted, cuprate addition, theoretical evaluation of stereoelectronic diastereofacial selectivity, 443
cyclopentanones, cyclocondensation with 21-chloromethyl-allyl phenylsulphone to give methylene-bicyclo[3.3.0]octanones, 201
cyclopentanones, substituted, synthesis via photorearrangement of quinone monoketals, 163
dihydropyrimidin-2(1H) or (3H)-one, N-substituted, regioselective synthesis, 5405
dihydropyrimidin-2(1H) or (3H)-one, N-substituted, regioselective synthesis, 5405
fluted [4] peristylane perimeter, extended functionalisation, 4069
indenones, substituted, anodic oxidation to 4-aryl isocoumarins, 543
mappicine ketone via chemical rearrangement of camptothecin, 6847
methylenecyclopentenones via electrocyclic ring closure of E and Z-enone mixtures, 6865
methylenecyclopentanones via electrocycloaddition of enynes, 6869
norbornenones, enolate alkylation, 3351
(R)-(+)-carvone and (+)-camphor, reductive coupling by TiCl₄-Mg

- reagent, X-ray structure of (+)-(1*S*,5*R*,1'*S*,5'*R*)-carvone pinacol, 5925
- spirodienone, photochemical reactivity and prep via oxidation of bis(2-hydroxy-3,5-di-*t*-butylphenyl)methanone, 5673
- spirodienones via thermal [1,3]-O to C migration in cyclic vinyl ethers derived from quinols, 3441
- steganone, synthesis via radical mediated intramolecular arylation using tributyltin hydride/ATBN, 2987
- tetra- and penta-alkylated cyclopentadienyl ketones and carboxylic acids, prep, 5641
- trans-bicyclo[4.3.1]decan-10-one, synthesis, inside-outside stereoisomerism, 4691
- tricyclic α -allyloxy ketone, anionic oxy-Claisen rearrangement, 4229
- tricyclic enone, stereocontrolled synthesis of (-)-paspaline, 2791
- tricyclic-, opibobolins, synthetic studies, 4909
- tricyclic-, synthesis for construction of indole-diterpene tremorgenic alkaloids, 2787
- Cyclic ketone halogen derivatives**
- 2-(1-chloroalkylidene)cyclohexanones, prep via reaction of 7-chloro-1-silyloxybicyclo[4.1.0]heptanes with FeCl₃, 3239
- 2-halocycloheptadienone enolates, synthesis of 2-substituted tropones, 4723
- Cyclisation**
- 1,2,4-triazinium salts with bifunctional nucleophiles, new route to condensed 1,2,4-triazines, 1431
- 1,3-diphospho-allene, formation of 1,2,3,4-tetrahydro-1-phosphanaphthalene, 333
- 1,7-ring closure of diene-conjugated diazo compds, route to chiral 1*H*-2,3-benzodiazepines, 6361
- 2-(2-alkyl-1-idenhydrazino)acetic acids, synthesis of 1*H*-pyrazol-4-ols, 1341
- 2-butylene dicarbamates catalysed by chiral ferrocenylphosphine-Pd complex, asymmetric synthesis of optically active 2-amino-3-butenols, 99
- 2-furfuryl methyl fumarate series, comparison of rates of cyclisation, *gem*-dimethyl effect, 2429
- 5,10,12-(5*E*,10*E*,12*E*)-octadecatrienoic and 2,7,9-(2*E*,7*E*,9*E*)-pentadecatrienoic esters, intramolecular Diels-Alder reactions, 2685
- 6,7-unsaturated carbonyl radical cyclisations, studies, 2585
- ω -ethylenic trifluoromethyl ketones and 8-ketoesters to give 5-membered rings bearing CF₃ group, 1011
- ω -unsaturated glycosides of 2-bromo-2-deoxy-glycopyranosides to glycols, prep of *cis*-fused chiral bicyclic acetals, 3691
- acetal-initiated-, of allylsilanes to highly functionalised piperidine derivatives, 3247
- acetoacetates to α -acyltetronic acids, 4807
- acid catalysed-, of aromatic diazoacetamides, synthesis of spirodienone lactams, isoquinolines and benzazepinones, 2643
- acid catalysed-, of *N,N*-dialkyl-2,4-bis(trifluoroacetyl)-1-naphthylamines to naphtho[1,2-*d*]1,3loxazines, 4599
- Ag-mediated-, of 4-allynyl- and 4-(2-propynyl)azetidiones, stereoselective synthesis of 3-substituted Δ^1 -carbapenems via N-C3 closure, 4253
- oxidative-, of allynyl alcohols, 4791
- allyloxy radicals, 837
- and generation of ω -unsaturated α -amino radicals, application of reductive, single electron transfer processes, 6685
- aryl radical-induced-, route to furo[2,3-*b*]benzofurans, abbreviated synthesis of aflatoxins B₁ and B₂, 4685
- biomimetic-, of oomucic acids to pimarane skeleton via organomercurial intermediates, 3713
- carbo-, new entry to steroid C/D ring synthon via sequential Claisen-ene approach, 5277
- cationic enone-olefin-, construction of functionalised C₂₀-tetraquinane carbon framework, synthetic studies towards 14-*epi*-crinipellins, 5025
- cationic-, of iron carbene complex, 4921
- conjugated carbodiimides to 2-aminopyridine derivs, 379
- cyclofunctionalisation of 4-allynylazetidiones and 4-(2-propynyl)azetidiones, Pd-mediated formation of Δ^1 - and Δ^2 -carbapenems, 4257
- diols with phenylthio migration, stereochemical control in synthesis of tetrahydrofurans, 4885
- directed bisepoxide-, use in synthesis of tricyclic polyether fragments incorporating spiroacetal subunit, 5301
- double-, of C₁₀-tetraenetetraol deriv to give teurilene, 5847
- double-, of C₁₀-tetraenetetraol deriv to give teurilene, 5847
- electro-, of enynes to methylenecyclopentenones, 6869
- electrocyclic ring closure of *E* and *Z*-enynes mixtures to methylenecyclopentenones, 6865
- enantioselective-, of chiral butane-1,4-diols to chiral tetrahydrofurans, synthesis of trans-2-(3-methoxy-5-methylsulphonyl-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl)-tetrahydrofurans, potent PAF-receptor antagonist, 6211
- enzymic-, formation of sesquiterpene sterpurane, absolute stereochemistry, 4337
- first double Knorr-, synthesis of diazaquinomycin A and B, 3545
- Hantsch-, of ethyl 4-chloro-2-benzylidene-acetoacetates with methyl 3-aminocrotonate to 2-chloromethylenel, 2,3,4-tetrahydropyridine-3,5-dicarboxylic ester, configuration at C₂-*c*, 6335
- Hg-induced-, of dipropargyl ethers, regioselective synthesis of 2-(1-aminoethyl)furans, 5029
- homochiral (α -alkoxyallyl)stannane precursor, stereoselective synthesis of cambranolides, 3899
- I₂-induced-, of 2-alkenyl substituted 1,3-dicarbonyl compds, approach to furan derivs, 4987
- intramolecular acetylde-, synthesis of calicheammin deoxyaglycone model, 4217
- intramolecular azide-, prep of oxygen-bridged aza[15]- and aza[17]annulene dicarboxylates, 219
- intramolecular cationic-, and generation of *N*-tosylimines derived from enolisable aldehydes, 3891
- intramolecular Diels-Alder-, of 1-alkenyl-2-aza-1,3-diene, 4799
- intramolecular Diels-Alder-, of 2-vinylfurans to form furanodecalins, 2107
- intramolecular ene-, of acyclic 1,7-octenyne derivs, 1,2-cyclooctadiene intermediate, 407
- intramolecular photo-, of ω,ω -bis(*p*-vinylphenyl)alkanes, mechanism, 5375
- intramolecular radical-, approach to indole alkaloids, 45
- intramolecular radical-, of acetals, cyclopentane synthesis and annulation, 897
- intramolecular-, of 2,2-bis(dimethylamino)biphenyls under electron impact, proximity effects in mass spectra of bis(dimethylamino)arenes, 5633
- intramolecular-, of activated Cu and epoxyalkyl bromides, direct formation of epoxyalkylCu reagent, 6753
- intramolecular-, of alkenyl radicals generated by 1,5-H-transfer to alkoxy radicals, 1441
- intramolecular-, of *N*¹,*N*¹-disubstituted 2-halobenzo-hydrazides, prep of stable indazol-3-ylidene oxides, 697
- iodo-, of allyl-amidines and -ureas to give imidazolines and imidazolones, 3001
- ion-vinylsilane-, prep of allopolimitoxin alkaloids, 6541
- isoquinolinium bromide to chiral oxazolo[2,3-*a*]tetrahydroisoquinoline and its asymmetric alkylation and synthesis of (S)-(-)- and (R)-(+)-salsolidines, 6949
- macro-, of α -alkoxyallylstannanes, remote double stereodifferentiation, 4811
- methoxymethyl substituted acyclic hydrazides to cyclic hydrazides via intermediate *N,N*-di(methoxycarbonyl)hydrazinium compds, 6975
- Mn(III)-based oxidative free radical-, of 8-ketoesters to give 7- and 8-membered rings, 5209
- modified Reformatsky-, synthesis of 11-membered cytochalasin ring system, 2291
- new BF₃ promoted 1,3-additions of RCuCNZnI₂Zr₂ to trisubstituted enones, 6693
- new reductive-, in the indole field, synthetic and structural studies of conomitine alkaloid series, 4563
- Pd-catalysed-, of addition products from aldehydes, ketones and imines to 2-bromozincmethyl-2-propenyl ethers, prep of 3-methylenetetrahydrofurans and 3-methylenepyrrolidines, 3579
- Pd-catalysed reductive enyne-, synthesis of 8-necrodiol, 1231
- Pd-catalysed-, of 1-acetoxy-2-methylene-6-heptenes, consistent with allyl-Pd/olefin insertion involving metal transfer to

- distal alkene terminal, 5529
Pd-catalysed tandem cyclisation-anion capture processes, hydride ion capture by allyl- and allyl-Pd species, 4329
Pd-catalysed-, via intramolecular carbonyladdition of alkényl and aryl halides with α,β -unsaturated carbonyl groups, 3903
Pd-promoted carbo-, of amnooxyhex-5-enopyranosides, 6589
Pd-promoted-, of ortho-substituted aryl allyl ethers, synthesis of benzofurans, 4687
photo-, Lewis acid promoted, of arylimines directed towards synthesis of pentacyclic natural products, 5213
photo-, of norbornadienes fused with quinone units, isomerisation to quadricyclanes, 1405
Pictet-Spengler directed-, use of arylsilanes in regioselective synthesis of isoquinoline alkaloids, 6715
pyrano[3,4-b]indol-3-ones, intramolecular Diels-Alder reactions, 2693
radical-, of 2',3'-O-isopropylideneuridine and -adenosine 5'-aldehyde, to 6,5'-cyclohydrouridine and 8,5'-cycloadenosine derivs, 75
radical-, route to (\pm)-androlactone a spiro-Y-butyrolactone, 6487
radical-, and enolate alkylation of bicyclo[2.2.2]oct-5-en-2-one, prep of tricyclic carbocycles, 5789
radical-, onto 2(5H)-furanone and maleate electrophores leading to spiro- and linear-fused γ -lactone ring systems, 3869
radical-, stereoselective C-C bond formation in carbohydrates, 6585
radical-, stereoselective synthesis of 2,4-cis and 2,4-trans tetrahydrofuran derivs via mono- or dichloromethyl radical, 321
radical-, synthesis of 4H-furo[3.2-c]benzopyrans, 3335
radical-, synthesis of functionalised spiroethers, 1315
radical-, synthesis of oxindoles, 6657
reductive iminium ion-alkyne-, total synthesis of (+)-pumiliotoxin A, 901
reductive-, of 8,8'-bisbromomethyl-1,1'-binaphthyl, 1521
regio- and stereoselective oxidative-, of cycloalkenols, substituent directed with ceric ammonium nitrate, 1771
regiospecific Pd-catalysed tandem cyclisation-anion capture processes, stereospecific group transfer from organotin reagents, 5565
rhodium carbenoid mediated-, synthesis and rearrangement of cyclic sulphonium ylides, 6009
rhodium carbenoid mediated-, synthesis and X-ray structures of cyclic sulphonium ylides, 6013
silica-gel catalysed-, of mixed ketene acetals, 5241
spontaneous-, of 1-phosphahexatrienes into 1,2-dihydrophosphinines, 4289
spontaneous-, of chain shortened lysine analog, 3111
stereoselective radical-, use of 8-membered ring templates, 6219
substituted pyrid-2-ones, prep by ring closure of acylated aminoazabutadienes, 4855
tandem cyclisation-anion capture, hydride ion capture in vinylpalladium species, 4325
trienes to 5a-aryloctahydro-2-benzazepines, 3841
trifluoroacetylated hydrazones, synthesis of 4-trifluoromethylpyrazoles, 5281
vicinal diol allyl acetates, Pd-catalysed to cyclic ethers, 2927
- Cycloaddition**
1,3-dipolar-, intramolecular, of nitrones with allylthioether groups and reductive cleavage with desulphurisation, diastereoselective synthesis of α,γ -aminoalcohols, 5755
1,3-dipolar-, of 1-chloro-2-phenyl-2-trimethylsilyl-2-phosphaethene with azides, nitrilimines, nitrile oxides and nitrilylidenes, 785
1,3-dipolar-, of photo-generated azomethine ylides, approach to 3,8-diazabicyclo[3.2.1]octane moiety of bioactive alkaloids naphthyridinomycin and quinoaroin, 3525
1-ethoxy-3-trimethylsilyl-1-propyne with α -haloketones to give dienic conjugated esters, 3065
2-(2,3-diphenylcyclopropen-1-yl)- β -tropolone, intramolecular Diels-Alder with inverse electron demand, construction of semibullvalene-type carbon skeleton, 4123
2-aza-1,3-dienes to nitriles bearing electron withdrawing groups, prep of pyrimidin-4-ones, 3799
2-vinylindoles with dimethyl 1,2,4,5-tetrazine-3,6-dicarboxylate to form new indolyl-1,4-dihydropyridazines and annelated pyridazines, 3927
3,4-dihydro-2H-pyran with benzylideneanilines, 3585
[6 π +4 π]-, of 5-azoniafulvene ions with nitrones and azomethine imines, 4415
[2+2+2]-, Rh-catalysed, regioselective route to calmetanactone, 813
[2+2] and [2+4] clay-catalysed-, of N-benzylidene aniline with vinyl ethers to give tetrahydroquinolines and azetidines, 547
[2+2] and [4+2]-, aminobicyclo[3.2.0]heptenones and aminonorbornenones from methacrylate or acrylonitrile and captodative dienes, 1139
[2+2] and [4+2]-, of 1,3-diazabutadienes with diphenylketene, 921
[2+2]-, and triplex-catalysed Diels-Alder reactions of enol ethers and ketene acetals, 5125
[2+2]-, intramolecular, of vinyl ketenes to olefins, synthesis of linear annelated triquinane derivs, 459
[2+2]-, of katenium ions and alkenes, stereoselective synthesis of substituted cyclobutylamines, 4309
[2+2]-, unusual, of allylsilane with 2,3-O-isopropylidene derivs of aldehyde-aldehyde catalysed by BF₃ etherate to give homoallyl alcohols, 4953
[3+2] and [4+2]-, with phosphazenes, prep of 1,2,4 λ^3 -thiazaphosphole, 1,2 λ^3 , 4 λ^3 -thiadiphosphole and 1,2 λ^3 -thiaphosphole, 4535
[3+2] Ni-catalysed cycloaddition .
- [3+2] nitrile oxide-, approach to retinoids, 1307
[3+2]-, asymmetric, Ni-catalysed, of (-)-camphorsultamacylate with methylenecyclopropane or 2,2-dimethyl-methylenecyclopropane to give 3-methylenecyclopentane carboxylic amides, 529
[3+2]-, of indolenine-derived azomethine ylides, rapid entry to pyrrolo[1,2-a]indolines, 5325
[4+2] cycloaddition of singlet oxygen to oxazoles, formation of oxazole endoperoxides, 1003
[4+2] cycloadducts via 1-phosphabutadiene, masked, 1,2-dihydrophosphate ring reaction with N-phenylmaleimide, dimethyl acetylene-dicarboxylate and benzaldehyde, 3077
[4+2]-, new method by adsorption on chromatography adsorbents resulting in dramatic acceleration, 175
[4+2]-, of 6-[(dimethylamino)methylene]amino-1,3-dimethyluracil(1) with electron deficient olefins to give pyrrolo[2,3-d]pyrimidines; (1) with DMAD or azodicarboxylates Michael addition occurs leading to pyrrolo[3,4-c]pyridines and theophylline derivs, 4401
(4+2)-, of 1-methoxybuta-1,3-diene to α -amino aldehydes, effect of N-protecting groups on asymmetric induction, 5975
(4+2)-, of 1-methoxybuta-1,3-diene to α -amino aldehydes, effect of N-protecting groups on asymmetric induction, 5975
alkynes with free singlet dimethylgermylene Me₂Ge, 5245 and generation and tautomerism of N-acyl manchnones, 2027 and generation of 2-azaallyl anions via transmetalation of N-(trialkylstannyl)methylimines, 761
asymmetric 1,3-dipolar-, to 5-methyloxy-2[5H]-furanones, 5317
base-induced intramolecular-, of homophthalic anhydrides leading to polycyclic peri-hydroxy aromatic compds, 5943
base-induced intramolecular-, of homophthalic anhydrides leading to polycyclic peri-hydroxy aromatic compds, 5943
butadiene and ethylene, transition state of Diels-Alder reaction, perturbational evaluation, 4699
cis-decalin, synthesis via Diels-Alder and double Michael addition with substituted Nazarov reagent, 5117
Diels-Alder-, of 1,4-naphthoquinone derivs with dienes, changes in stereoselectivity and rate by hydrophobic solvents and by bovine serum albumin, 3347
Diels-Alder-, of 5-methoxy-2-pyrones, synthesis of substituted benzenoids and biphenyls, 1595
Diels-Alder-, of di-1-menthyl acetoxyethylenemalonate with furan under high pressure, enantioselective synthesis of β -D-ribofuranosylmalonate, prospective synthon for C-nucleoside, 5397
Diels-Alder-, of di-1-menthyl acetoxyethylenemalonate with furan under high pressure, enantioselective synthesis of β -D-ribofuranosylmalonate, prospective synthon for C-nucleoside, 5397

- Diels-Alder-, promoted by Lewis acid and high press of N-alkyl-N-sulphanyl dienophiles, 4233
- Diels-Alder-, unusual product formation, reaction of aryl chromium carbene complexes with 1-hexyne, 2513
- fulvene in water, influence of rate and selectivity, 3477
- furan-carbonyl photo-, use of unsymmetrically substituted furans, synthesis of a kadsurenone-ginkgolide hybrid, 6689
- generation and-, hydroxy(and trimethylsiloxy)phenyl-ethynylketene, 2765
- high pressure induced Diels-Alder-, of butenolides to electron-rich dienes, 6989
- intermolecular benzyne-, approach to protoberberines, synthesis of 8-oxypseudopalmatine, 2491
- intermolecular [2+2] photo-, of 2,5-cyclohexadiene-1-ones to alkenes, 6881
- intermolecular [3+2]-, between olefins and ylide generated from amine N-oxide designed to allow dealkylation of cycloadduct, prep of N-H pyrrolidines, 3481
- intramolecular addition of unsymmetrical allylsilane to conjugated dienone, prep of fused cyclooctanes, tandem Michael addition/enolate-accelerated Cope rearrangement mechanism, 2773
- intramolecular Diels-Alder high press-mediated reaction of furans, factors controlling cycloaddition with monoactivated dienophiles, 5017
- intramolecular Diels-Alder-, of furans with doubly activated dienophiles, stereochemistry, 5825
- intramolecular Diels-Alder-, of indoles, 5605
- intramolecular Diels-Alder-, of sulphanyl substituted trienes, 6369
- intramolecular Diels-Alder-, of unsaturated acyclopentadienes and cyclopentadiene carboxylates, 135
- intramolecular Diels-Alder-, prep of aromatic yohimbold and protoberberine alkaloids, 6725
- intramolecular nitrile oxide-, formation of functionalised cyclic ethers, 4169
- intramolecular nitrene-, to α, β -unsaturated esters, diastereoselectivity, 2881
- intramolecular [2+2] of ketenes, prep of bridged bicycloalkanes, short synthesis of (\pm)-clovene, 1493
- intramolecular [2+2] photo-, approach to [7]-prismane analogs, 1613
- intramolecular [2+2]-, of ketenes and vinylketenes to olefins, synthesis of angular annulated triquinane derivs, 2303
- intramolecular [2+2]-, of keteniminium salt, asymmetric induction, approach to chiral 13-oxa-prostanoids, 3369
- intramolecular [3+2]-, of mesionic carbonyl ylides, 1677
- intramolecular [4+2]-, of α, β -unsaturated hydrazones, route to annelated pyridines, 6349
- intramolecular-, of oxime with olefin, stereospecific formation of functionalised pyrrolidines, 5313
- intramolecular-, of arylketenes with alkenes, reactions of 5-aryl bicyclo[3.2.0]heptan-6-ones, 3175
- intramolecular-, of isobenzofurans, synthesis of 6-function-alised 11-oxasteroids, 2045
- intramolecular-, of oximes with vinyl sulphones, 2417
- ketene-imine-, leading to homochiral 3-aminoazetidiones, application, asymmetric synthesis of β -lactam antibiotics, 5065
- ketene-S,S-acetals as 1,3-dipolarophiles, reactivity towards electron deficient azides, 6475
- ketenealkylsilylacetals with ethyl propionate, 6443
- [n+1] cycloaddition of an iminophosphane, new route to λ^1 -phospholones and λ^2 -phosphirenes, 605
- nitrones, effect of N-t-Bu group and reaction of hydroxylamines with methyl propiolate, 307
- Oppolzer's chiral sultram with nitrile oxides, model for asymmetric induction in non Lewis acid catalysed reactions of Oppolzer's chiral sultram, 3555
- oxide-olefin-, new application and limitation in formation of fused rings possessing functionality in angular Me group, MM2 calculations, 715
- Pauson-, steric control, dicobalthexacarbonyl complexes if internal alkynes, reactiion with olefins to give cyclopentenones, 999
- phosphonium ylides, mechanistic aspects of reaction with alkyl propynoates, 381
- photochemically generated phenylcyclopropane radical cation to N-methylnaphthylimide radical anion, mechanism, 513
- photo-Diels-Alder-, of N-methyltriazolidinedione to phenanthrene, 5509
- photochemistry of constrained non-conjugated arene-ethene bichromophoric systems, 4319
- regio- and stereo-specific class 2 tandem Michael addition-cycloaddition reactions of oximes, 4323
- regioselective synthesis of 4,5- and 4,8- disubstituted aza-anthraquinones by Diels-Alder route, 5913
- regioselective-, between 3-fluorobenzene and 2-alkylfurans, 6227
- simple imines with activated dienes leading to amino sugars; "chelation controlled" diastereoselectivity in addition to an α, β - β -hydroxy imine protected as a ketal, 4653
- tandem 1,3-dipolar-, of cyclohexane with N-arylmaleimides, entry to substituted tetrahydro-2H-isoxazolo[2,3-b]isoxazoles, 3331
- taxol skeleton, saturated C-ring approach, 1367
- tetrahydronaphtho[2.1-b]thiophene via intramolecular Diels-Alder with an 1-alkenylthieno[2.3-c]furan, 1137
- telakis(2,6-diethylphenyl)-digermene, 3383
- thioaldehydes in-, synthesis of nuclear analogs of pyrazolidinone antibacterial agents, 5061
- two dioxophosphidure dianions with two mols of unsaturated dihalide to give unsaturated macrocyclic phosphine tetraoxides, 6247
- unusual-, of cage ketone with tetracyanoethylene by irradiation of electro donor-acceptor complex, 5779
- use of 2,3-(diphenylsulphonyl)-1-propene as an allene equivalent, 265
- vs fragmentation-addition in reaction of dienes and homo-dienes with phenyl (tolyl-sulphonyl)acetylene, 831
- (Z,Z)-22,3-bis(trimethylsilyl)1,4-dibromo- and 2,3-bis(trimethylsilyl)-1,1,4,4-tetrabromobuta-1,3-dienes, synthesis and Diels-Alder reactions, 1833
- Cycloalkanes**
- 1-alkoxy-2-methylene cycloalkanes, prep via one-carbon ring expansion, 1819
- Cycloalkenes**
- epoxy cycloalkenols, electrophilic additions, regiochemistry and stereochemistry, 2097
- Pd-catalysed intermolecular allylic arylation, 905
- perfluoro-, electropolymerisation, 1295
- Cyclobutanes**
- cyclobutenes, *cis*-3,4-disubstituted *syn anti* selectivity, 6593
- cyclobutylamines, substituted, stereoselective synthesis via [2+2] cycloadditions of keteniminium ions and alkenes, 4309
- cis*-3,4-disubstituted, *syn*-stereoselective addition of monosubstituted diazomethanes, 6601
- cis*-disubstituted, *syn,anti*-selective reaction with diazoalkanes, 6597
- Cycloheptanes**
- 4-(2'-butylallylidene)-cyclohept-2-en-1,5-diyI, generation and ESR characterisation of *cis/trans* isomers, 2719
- allylsilanes for one-pot prep of 6- and 7-membered rings, 689
- prep of 6- and 7-membered rings via acetal stannanes, 685
- Cyclohexanes**
- 4-alkyl-4-(4-methoxyphenyl)-cyclohex-2-en-1-ones, synthesis, Scelerium alkaloid O-methyljoubertamine, 5483
- allylsilanes for one-pot prep of 6- and 7-membered rings, 689
- cyclohexene systems, stereocontrol of quaternary chiral center, potential chiral synthons for vitamin D and related componds by enzymatic approach, 6961
- cyclohexene, oxidation with H₂O₂ using heteropoly-11-tungstates, 823
- methylene-, and -cyclopentane deriva, synthesis, 5663
- prep of 6- and 7-membered rings via acetal stannanes, 685
- tandem 1,3-dipolar cycloadditions with N-arylmaleimides, entry to substituted tetrahydro-2H-isoxazolo[2,3-b]isoxazoles, 3331
- trans*-4-n-alkyl-*trans*-2-hydroxymethylcyclohexanols, synthesis from
- trans*-4-n-alkyl-*trans*-2-hydroxymethylcyclohexanols, synthesis from

Cyclooctanes

8-membered carbocyclic rings via transannular aldol condensations within macrocyclic lactones, 6897

Cyclooctatetraenes

bridged with methylene groups in 1,3-manner, prep in rac-form via ultimate disrotatory opening of bicyclo[4.2.0]octatriene, 41
dianion of-, stereoselective cycloannulation and bridging, 2809

Cyclopentanes

1,3-diphenyl-1,3-cyclopentanediy1, stable localised biradical, 3753
2-ethenyl-3-, via triphenylstannyl- or benzenethiyl-radical promoted transformation of 1,1-dialkoxy-carbonyl-2-(1,3-butadienyl)cyclopropanes, 1543
cyclopentene, [2+3] annulation, synthesis of (-)-retigeranic acid, 3283
cyclopentenone formation via an allene oxide, 5613
methylene-, and -cyclohexane derivs, synthesis, 5663
synthesis and annulation via intramolecular radical cyclisation of acetals, 897
vinyl-, synthesis from vinylcyclopropanes and alkenes promoted by benzenethiyl radical, 5135

Cyclophanes

1-chloro-1-fluorocyclopropanes, new synthesis via chlorofluorocarbene generation by dehalogenation of fluoro-trichloromethane with reduced titanium, 6749
1,11-0-benzo[2]orthocyclo[2](4,5)tropanophanes, synthesis and structure, 5961
2,11-diselena[3.3]metacyclopentane, conformational changes determined by variable temp ^{77}Se NMR, 5587
12,12,21,21-tetradeuterio-1,4-dioxal[4.3.3](1,3,5)cyclophane, conformation, 6275
12,12,21,21-tetradeuterio-1,4-dioxal[4.3.3](1,3,5)cyclophane, conformation, 6275
[1.1.1.1](1,3)-2-methoxy-azulenophane, synthesis, azulene analog of calixarenes, 2839
[2.2](2,5)pyrazinophanes, synthesis and molecular structure, 3655
[2.2]cyclophanes, new synthetic method, 1031
[2.2]metacyclopentanes, syn to anti isomerisation, two pathways depending on internal substituents, relative sizes of H and F substituents, synthesis of dihydropyrene with internal F substituents, 3287
[5.3]furanosoxazolophane, synthesis and transformation into 16-membered macrolides, 2051
[n.1]-metacyclopentanylidenes, spectroscopic properties, 4377
[n](2,4)pyridinophane ring system, synthesis and structural studies, 5957
[n](2,4)pyridinophane ring system, synthesis and structural studies, 5957
C₂-symmetric phospho[2.2.2]-cyclophane, synthesis, 5101
dome-shaped cyclophane type of macrotricyclic anion receptor molecules, synthesis, 1709

Cyclopropanation

1,3-cyclooctatetraenophanes, convenient route, 41
diastereoselective-, enantioselective synthesis of sesquiterpene (+)-modhephene, 2147
intramolecular-, within small bicyclic systems, conformational consequences, 269
tandem cyclopropanation/Cope rearrangement sequence, intramolecular approach to 7-membered rings, 975

Cyclopropanes

1,1-dialkoxy-carbonyl-2-(1,3-butadienyl)-, transformation into 2-ethenyl-3-cyclopropanes promoted by triphenylstannyl- or benzenethiyl-radicals, 1543
2,4-pentandiol as chiral auxiliary, use in diastereo-differentiating Simmons-Smith reaction, 5775
alkyl cyclopropanecarboxylates, synthesis and use of selenones as precursors, 3269
alkylidene-, and allylidene-, synthesis, 25
alkylidene-, prep, 2531
allylidene-, *m*-chloroperbenzoic acid oxidation to 2-vinyl-cyclobutanones, 27
chemistry related to alkaloid CC-1065, 2167
cyclopropyl phosphonates, improved prep and their application in arylidene cyclopropane formation, 5033
divinyl-, rearrangement, phorboid cycloheptene synthesis via complementary 1,4-stereocontrol, 6741
donor-acceptor substituted-, synthesis via carbene complexes, 2315
insertion of electrophilic P, new synthesis of phosphitanes, 1219
methylene-, Ni-catalysed codimerisation with 2-cyclopentenone with in presence of triethylborane, prep of 6-methylene-bicyclo[3.3.0]octan-2-one, 4539
methylene-, or 2,2-dimethyl-methylene-, asymmetric Ni-catalysed [3+2] cycloaddition of (-)-camphorsultamacylate to give 3-methylenecyclopentane carboxylic amides, 529
methylene-, Pd and Ni-catalysed reactions with trimethylsilyl cyanide, 3979
methylene-, rearrangement, effect of trifluoromethyl group, 6839
methylene-, rearrangement, enhanced rate by pyridine N-oxide group, radical stabilising function, 749
phenyl-, radical cation, photochemically generated, cycloaddition to N-methylnaphthylidene radical anion, mechanism, 513
siloxy-, Pd-catalysed carbonylative symmetrical coupling, synthesis of 4-keto pimelates, 1541
trans- and cis-1-fluoro-2-bromo-, synthesis and acetolysis, relative trans/cis ratio 19 at 100°, 53
vinyl-, and vinylidenehydrofurans, optically active, via Pd-catalysed asymmetric intramolecular allylation, 669
vinyl-, derivs, regioselective and stereoselective synthesis from 1,3-dienes and a Fischer carbene complex, 2319

vinyl-, ring opening with *p*-toluenesulphonyl iodide, 4173
vinyl-, and alkenes, synthesis of vinylcyclopentanes promoted by benzenethiyl radical, 5135
with three electron withdrawing groups, new synthesis, 1033

Cycloreversion

acylquadracyclane to acylnorbornadiene promoted by metal oxides, 4109
stereochemistry of-, of 6,7,8-trimethyltricyclo[3.2.1.0^{1,3}]octanes, reciprocal tests of steric opposition down-disrotatory thermal decyclisation of [3.2.1]propellanes, 4835

Decylation

anodic-, of 2-azetidinones, 1497
N-debenzylated initiated by photosensitised electron transfer, convenient and mild approach, 4157

Dealkylation

oxidative demethylation of succinimide with N-bromo-succinimide, 359

Demination

oxidative-, of *sec*-alkyl primary amines with 3,5-di-*t*-butyl-1,2-benzoquinone, 1H NMR of spontaneous rearrangement, 851

Deblocking

anomeric-, of 2-trimethylsilylethyl glycosides yielding pure deblocked mono- and disaccharides, 361

Decarbonylation

α -alkoxyacid chlorides mediated by samarium didiodide, use in synthesis of 1,2-glycol monoethers, 4847

Degradation

carboxylic acid to functionalised nor-alkanes via acylcobalt salophen intermediates, 707
photo-, of 2,4-diphenyltetra-cyclo[3.3.2.0^{2,4}.0^{3,5}]deca-9-ene-6,8-dione, generated constrained cyclopropyl-dicarbonyl diradical, new skeletal rearrangements, 7593

Decarboxylation

α -ketoacid-, thiazolium catalysed, novel enzyme mimic, 6235
carboxylation-decarboxylation sequence, new synthesis of 3(2H)-furanones, 5941
non-enolisable carboxylic acids, alkyl lithium-induced, prep of stabilised carbanions, anion equivalent to Hungdieker reaction, 4505
oxidative bis-, with cerium of α -alkoxymalonic acids, 769
oxidative-, of cyclic amino acids and dehydrogenation of cyclic *sec* amines with iodosobenzene, 6917
photodecarboxylative chlorination of carboxylic acids and their benzophenone oxime esters, 6287

Decomposition

thermal-, of substituted arylazo compds, rate of formation of capto-dative type radicals, 3379

Decyanation

vacuum gas-phase dehydrocyanation, of thiocyanohydrins, formation of reactive thioaldehydes, MS/MS characterisation, 5899

Decyclisation

down-disrotatory thermal-, of [3.2.1] propellanes, reciprocal tests of steric opposition, cycloreversion stereochemistry of 6,7,8-trimethyltricyclo-[3.2.1.0^{1,2}],¹⁰octanes, 4835

Dehalogenation

fluorotrichloromethane with reduced titanium, generation of chlorofluorocarbene, new synthesis of 1-chloro-1-fluorocyclopropanes, 6749

Dehydration

Burgess reagent, use in conversion of prim amides to nitriles, 2155

Dehydrogenation

catalytic-, of sec amines with cobalt Schiff base complex-oxygen system, 4115
microbial-, of dithia-analog of stearic acid, 285
of cyclic sec amines with iodobenzene, 6917

Deoxygenation

Barton-McCombie radical-, use of S-(4-alkenyl)-dithiocarbonates as mechanistic probes, 5805
of oxiranes via aluminium triiodide reagent, 5815
stereoselective-, of 6-aryl-6-hydroxy-1,2,3,5,6,10b-hexahydropyrrolo[2.1-a]isoquinolines with borane-THF in trifluoroacetic acid; stereocontrolled proton transfer in an enammonium-iminium rearrangement, 5073

Dephosphorylation

5R,8R,9S,11R-dephosphorylated CI-920, synthesis of deriv, 753

Deprotection

2-(trimethylsilylmethoxy)-methylated alcohols, synthesis of thyriferyl-23 acetate, 5417
and protection of alcohols as t-butyl ethers in pheromone synthesis, 2951
methyl phosphate protecting group, removal from oligodeoxy-nucleotide phosphotriesters with 2-mercaptobenzothiazole reagent, 5479
modern-, use in synthesis of O-phosphotyrosine-containing peptide, 3591
of PCM penicillanate esters, application of ester cleavage with bis(tributyltin) oxide, 6893
Pd-catalysed-, of selective allyl and allylcarbonyl groups in phosphate chemistry in presence of propargyl and propargyloxy carbonyl groups, 623
removal of acid-labile protective groups under mild conditions, 5609
selective N-terminal-, in peptide synthesis, use of penicillin acylase, 1131
with chlorotrimethylsilane-phenol reagent in peptide synthesis using t-butyl based protecting groups, 303

Desilylation

α -trimethylsilylmethylene-Y-lactones, new route to α -

methylene-Y-lactones, 2581
of fluoroalkylsiloxiranes by fluoride ion, nucleophilic species formed promotes reaction with electrophiles, 5923
photo-, of β - and Y-hydroxysilanes, deuterium labelling and Si-directed epoxide opening, 6395

Dethioacetylation

new efficient reagents for-, Ni containing complex reducing agents NaH-RONa-Mix₂, 2963
new procedure, 5471
oxidative-, at pentacovalent P by cumyl hydroperoxide catalysed by metalloporphyrins, 1827
stereospecific-, of sulphinyl-aziridines with EtMgBr, synthesis of (Z)-N-arylaziridines, 4093

Desulphurisation

of thiranes and synthesis from alkenes, 4177

Diastereocontrol

via Lewis acid-promoted ene reaction with glyoxylates, application to stereocontrolled synthesis of 22R-hydroxy-23-carboxylate steroid side-chain, 6305

Diastereomeric compds

separable-, from reaction of R-(+)-ethynyl p-tolylsulphoxide with cyclopentadiene, 2923
separation, use of 1-naphthyl-phenylmethylsilyl group for optically active allyl alcohols and (S)-1-phenyl-1,2-butadiene, 1355
synthesis of (\pm)- α -bisabolols and (\pm)-chlorphenoxamine, use of organo-Mn reagent, 3659

Diastereoselection

1,2-anti reduction of 2-alkyl-3-hydroxy ketones via their silyl ethers, 1021
1,5-remote-, in organic synthesis using (n-arene)tricarboxyl chromium complexes 6271
[2,3]Wittig rearrangement of tertiary α -lithio ethers, 6901
 α -hydroxycycloalkanone ketals, simple chromatographic resolution, 4035
aldolisation of tetroses and pyranoses mediated by rhodium, 3761,4649
alkylation of chiral tin enolates onto cyclic acyliminium species, asymmetric total synthesis of (-)-supinidine, 6133
alkylation of vinylogous urethanes derived from simple tetronic acids, 1489
and enantioselective new synthesis of 2-azetidiones as intermediates of β -lactam antibiotics, 815
and regioselective hydroxylation of N-t-butoxycarbonyl-L-pyroglutamate monoenolate to optically pure (4R)-hydroxyproglutamate from which (-)-bulgecinine was synthesised, 329
conjugate addition of benzyl anions to 2-(R)- and (S)-benzyloxy-2,5-dihydro-4-(3,4-methylenedioxybenzoyl)furan, total synthesis of lignans(-) and (+)-bursaran, (-)-cubebin, and (-)-hinokinin, 3599
conjugate addition of internal nucleophile to chiral vinyl sulphoxides with stereogenic

center at allyl-C, "intramolecular" double asymmetric induction, 3121
conjugate addition with acetals, oxazolidines and imidazolidines as chiral auxiliaries, 4411
controlled [2,3]Wittig ring contraction, synthesis of 6-hydroxyocembrane precursors, 3547
cyclopropanation, enantioselective synthesis of sesquiterpene (+)-modhepene, 2147
D-galactopyranosyl transfer to meso diols catalysed by β -galactosidases, 5743
diastereoface selectivity in thermal reaction of aldehydes with δ -alkoxyallylstannanes, 2479
diastereofacial selectivity in cuprate additions to 5-methoxy-2-cyclopentanones, 439
in "chelation controlled" addition to an α,β -dihydroxy imine protected as a ketal, cycloaddition of simple imines with activated dienes leading to amino sugars, 4653
in carbonyl alkylation by allylic carbonates using PdCl₂(PhCN)₂-SnCl₄ system, 3563
intramolecular nitrene cycloadditions to α,β -unsaturated esters, 2881
new prep of 1,2-diol systems via silyloxy[2,3]Wittig rearrangement, 5409
new synthesis of chiral Y(aminoalkyl)- α -hydroxy-Y-lactones, and its application to synthesis of renin inhibitors, 3923
nucleophilic conjugate addition to 2-hydroxyalkylpropenates, 949
reactions of acyclic α -lithiated sulphide, thermodynamic control, 2547
rearrangement of styrene oxide, diastereotopic selection of C₂ hydrogens in rearrangement of C1-substituted epoxides, 2575
stereocontrolled synthesis of *cis*-3,4-diarylisochroman-1-ones via reaction of benzaldehydes and α -lithio-2-cyanodiarlylmethane intermediates, 3777
stereoelectronic diastereofacial selectivity, theoretical evaluation in cuprate addition to 5-substituted cyclopentanones, 443
synthesis of 2-azabicyclo-[2.2.2]octan-2-ones and 2,3,4-substituted cyclohexanones, Diels-Alder reactions of 2-azadienes, 4573
synthesis of (E)-1-trimethylsilyl-1-en-3-yne, (1E,3E)- and (1E,3E)-1-trimethylsilyl-1,3-dienes, 2239
synthesis of α,γ -aminoalcohols via intramolecular 1,3-dipolar cycloaddition of nitrones with allylthioether groups and reductive cleavage with desulphurisation, 5755
synthesis of *cis* Quercus-lactone β , regio- and stereo-specific ring expansion of optically active cyclopropylvinylcarbinols, 1537

Diastereospecific synthesis

addition of organometallics to (S)-2-alkoxy-1-(1,3-dithian-2-yl)-1-propanones and its application to synthesis of (-)-trachelanthic acid, 3955
non-racemic synthesis of C-10 to C-18 segment of FK-506, 277
non-racemic synthesis of C-20 to

C-34 segment of FK-506, 281

Diaza compds

1,3-diazabutadienes, [2+2] and [4+2] cycloadditions with diphenylketene, 921
 diazocoronands, N-methylation, application of ultrasound, 959
 diazadiphosphetidine system, entry to, synthesis of spiranic azadiphosphiranium cation, 4547

Diazenes

bicyclic-, Arrhenius activation parameters, use in 1,3-diyll trapping reactions and intermediate formed in deazetation, 5711

Diazonium ions

nitrosamine derived-, displacement of O- vs N-substituents by three divergent mechanisms, 2903

Diazo compds

1,1,1-triaryl-3-diazo-2-propanones, acetolysis, neighbouring group participation, 1,3-shift of an aryl group via 5-membered transition state, 4193
 α -diazoketones, Rh-catalysed C-H insertion, regiocontrol by electron withdrawing groups, 2283
 alkyl- and aryl-diazoalkanes, *syn,anti*-selectivity of reaction with dichlorocyclobutene, 6593
 aromatic diazoacetamides, acid catalysed cyclisations, synthesis of spirodienone lactams, isoquinolines and benzazepinones, 2643
 bis- and tris(diazomethyl)-phosphanes, new building blocks for synthesis of P-heterocycles, 925
 diazoalkanes, *syn,anti*-selective reaction with *cis*-disubstituted cyclobutenes, 6597
 diazomethanes, monosubstituted, *syn*-stereoselective addition of *cis*-3,4-disubstituted cyclobutenes, 6601
 diene-conjugated, asymmetric induction in 1,7-ring closure, route to chiral 1H-2,3-benzodiazepines, 6361
 N-benzyl-diazoacetamides, Rh(II) acetate-catalysed intramolecular addition, synthesis of cycloheptatriene, 2639
 nitrodiazoacetic acid, synthesis, reactivity and structure, 6031
 trimethylsilyldiazomethane reagent, prep of (9E)-1-trimethylsilyl-1-alkenes, 6295
 trimethylsilyldiazomethane, reaction with iron and cobalt porphyrin perchlorates, 5677

Diazonium compds

arene-diazonium tetrafluoroborates, reactivity towards sulphur nucleophiles in aprotic solvents, synthesis of S-aryl thioacetates, 4185

Dienes see also Trienes

1-alkenyl-2-aza-1,3-dienes, intramolecular Diels-Alder cyclisations, 4799
 1-benzyl-dimethylsilyl-4-phenylthio-1,3-butadiene, synthesis, new diene-regenerable Diels-Alder synthon, 6719
 (1E,3Z)- and (1E,3E)-1-trimethylsilyl-1,3-dienes, stereospecific synthesis via sequential cross coupling, 3705
 1-methoxybuta-1,3-diene, (4+2)-

cycloaddition to α -amino aldehydes, effect of N-protecting groups on asymmetric induction, 5975
 1-phosphabutadiene, masked, 1,2-dihydrophosphate ring reacts to give [4+2] cycloadducts with N-phenylmaleimide, dimethyl acetylene-dicarboxylate and benzaldehyde, 3077
 1,2-cyclooctadiene intermediate in intramolecular ene reaction of 1,7-octenyne, 407
 1,3-, 1,2-dimetalated, prep via "double transmetalation", 3915
 1,3-, low-temp addition to ethyl propiolate via intermediacy of propargyl cations generated from triethyl orthopropiolate, 3407
 1,3-, monooxides, Pd-catalysed reaction with sodium azide, 1,4-azido-hydroxylation of conjugated dienes, 4851
 1,3-, selenosulphonation, synthesis of 2-(phenylsulphonyl)-1,3-dienes, 1445
 1,3-, silylated, synthesis via carbopalladation of allenes, 627
 1,3-, synthesis via nucleophilic substitution of α -allenic alcohols by Murahashi method, 1701
 1,3-butadiene, 1,4-regioselective iodofunctionalizations with I(py)BF₄, 6497
 1,3-diazabutadienes, [2+2] and [4+2] cycloadditions with diphenylketene, 921
 1,4-cyclohexadienes, 3,3-disubstituted, improved conversion to 2,5-cyclohexadien-1-ones, 3907
 1,5-hexadienes, alkali-metal induced C-C bond cleavage, C-H bond cleavage and cyclopolymerisation, 3929
 2-aza-1,3-diene, synthesis from phosphazenes, 4863
 2-aza-1,3-dienes as precursors in synthesis of N-substituted β -lactams, 3-step synthesis of 4-acetoxy-3-phenoxy-2-azetidione, 2409
 2-azadienes, Diels-Alder reactions, diastereoselective synthesis of 2-azabicyclo-[2.2.2]octan-2-ones and 2,3,4-substituted cyclohexanones, 4573
 2,5-dimethyl-2,4-hexadiene, regiocontrolled functionalisation into epoxy alcohols in presence of Ti or V, 531
 4-hydroxy-1-phospha-1,2-butadienes and 1-phosphabutatrienes, formation, 2935
 activated-, cycloaddition with simple imines leading to amino sugars; "chelation controlled" diastereoselectivity in addition to an α,β -dihydroxy imine protected as a ketal, 4653
 acylated aminoazabutadienes, ring closure, prep of substituted pyrid-2-ones, 4855
 acylcyclopentadienes, unsaturated, and cyclopentadiene carboxylates, intramolecular Diels-Alder reactions, 135
 and homo-dienes, reaction with phenyl(tolylsulphonyl)-acetylene, cycloaddition vs fragmentation-addition, 831
 and Rh-acetate stabilised vinylcarbenoids, intramolecular tandem cyclopropanation/Cope rearrangement, 975
 and triene diolates of unsaturated carboxylic acids, Ag-ion coupling, synthesis of octa- and dodeca-diendioic acids, 6181
 axially dissymmetric 3,5-octadiene

rearrangement, 1157

aza-diene substrate for cycloaddition and Michael-type reactions, 4401
 butadiene and ethylene, transition state of Diels-Alder reaction, perturbational evaluation, 4699
 captodative-, and aminobicyclo-[3.2.0]heptenones and aminonorbornenones from methylacrylate or acrylonitrile, [2+2] and [4+2] cycloadditions, 1139
 chiral-, conformational model for asymmetric Diels-Alder reactions, 5225
 conjugated-, Pd-catalysed 1,4-diacetoxylation, (π -allyl)Pd(II)(quinone) complexes involved, 2243
 cyclooctadienes, disubstituted, intramolecular radical cyclisation to give *trans*-bicyclo[6.3.0]undecane ring system, 6219
 cyclopentadiene condensation, role reversal with heterodienophiles derived from arylamines and aldehydes, synthesis of novel tetrahydroquinolines, 5855
 cyclopentadiene, reaction with R-(+)-ethynyl p-tolylsulphoxide to give separable diastereoisomers, 2923
 cyclopentadienes, highly alkylated functionalised, synthesis, 5641
 diazo-2-trimethylsilyl-2-sila-3,5-cyclohexadienes, photo and thermal rearrangement with silabenzene and silafulvene as intermediates, 467
 Diels-Alder reactions with 1,4-naphthoquinone derivs, changes in stereoselectivity and rate by hydrophobic solvents and by bovine serum albumin, 3347
 dienyliron complexes, alkylation of silyl ketene acetals, application to formation of quaternary C-centers, 869
 doubly activated dienophiles, intramolecular Diels-Alder reaction with furans, stereochemistry, 5825
 (E)-1-trimethylsilyl-1-en-3-yne, (1E,3Z)- and (1E,3E)-1-trimethylsilyl-1,3-dienes, diastereoselective synthesis, 2239
 electron-rich-, via high pressure induced Diels-Alder cycloadditions of butenolides, 6989
 furan-diene, intramolecular Diels-Alder reaction rate, effect of anchoring substitution, 2493
 hydrophobic-, and dienophiles, rates of intermolecular Diels-Alder reactions in ethylene glycol, 3745
 monoactivated dienophiles, factors controlling cycloaddition with furans, high press-mediated intramolecular Diels-Alder reaction, 5017
 N-alkyl-N-sulphinyl dienophiles, Lewis acid and high press promoted Diels-Alder cycloadditions, 4233
 norbornadienes fused with quinone units, isomerisation to quadricyclanes, 1405
 regio- and stereoselective Pd-catalysed functionalisation, synthesis of (\pm)-sativene, 5973
 (S)-1-phenyl-1,2-butadiene and optically active allyl alcohols, prep and separation of diastereoisomers, use of 1-naphthylphenylmethylsilyl group, 1355

- vinylidenecyclohexadiene ipso adduct, isolation by photolysis of 1-(p-ethoxyphenyl)vinyl bromide and alcoholysis to vinyl ethers, 6141
- (*Z,Z*)-22,3-bis(trimethylsilyl)-4,4-dibromo- and 2,3-bis(trimethylsilyl)-1,1,4,4-tetrabromobuta-1,3-dienes, synthesis and Diels-Alder reactions, 1833
- Dimerisation**
- 1,1-bis(trimethylsilyl)ethylene-, to 1,1,4,4-tetrakis(trimethylsilyl)butane-1,4-diyl dianion a reagent for Peterson reaction, 6939
- co-Ni-catalysed-, of 2-cyclopentenone with methylenecyclopropanes in presence of triethylborane, prep of 6-methylene-bicyclo[3.3.0]octan-2-one, 4539
- desulphur-, intramolecular, of bridged bis-fluorenone-dithioacetals, synthesis of bifluorenylidene-hinged crown ethers, 5131
- reductive-, of imines in a Pb/Al bimetal redox system, 3811
- Dimers**
- 3-bromo-6-dimethylamino-1-azafulvene-, lithiation, synthesis of 4-mono- and 4,5-disubstituted pyrrole-2-carboxaldehydes, 3215
- 6-dimethylamino-1-azafulvene-, lithiation, synthesis of 5-substituted pyrrole-2-carboxaldehydes, 777
- antiparallel and parallel-, of bis-cysteine peptides, synthesis, uteroglobin-like peptide cavities, 3845
- dihematoporphyrin ether and related porphyrin dimers, synthesis, 2501
- dimeric anthracyclin analog, synthesis and DNA crosslinking, 5105
- dimeric products of camphor by dissolving metal reduction, 2527
- "dimers" of pyrazolidin-3-one-azomethinimines without centre of symmetry via three step addition-addition-elimination pathway, 2939
- hematoporphyrin-, and trimers with ether linkages, synthesis, 4657
- new chalcone-, from *Lophira alata*, 5797
- Diols and triols**
- 1-vinyl-1,2-diols, enantioselective synthesis of vinyl epoxides and α,β -dialkoxy aldehydes, 5685
- 1,2-diol systems, new diastereoselective prep via siloxy[2,3]Wittig rearrangement, 5409
- 1,2-glycols, and α -hydroxy ketones, oxidative cleavage with Jones reagent, 6403
- 1,2,4-triols and enantiomerically pure 2,3-dihydroxy ketones, synthesis via baker's yeast reduction of 5-acetyl-2-isoxazolines, 6167
- 1,4-diols by conversion of ketones via $\text{TiCl}_4/\text{Mg}/\text{BrCH}_2\text{CH}_2\text{Br}$ reagent system, 1,2-dicorganometallic equivalent, 1583
- 2-amino-1,3-propane diols, racemisation, new strategy; key intermediates for synthesis of antibiotic drugs, 5561
- 2-methyl-1,2-hexanediols, optically pure, obtained from 2-hexanone using 1,3-*trans*-oxathiane, 5535
- 2,4-pentandiol as chiral auxiliary, use in diastereodifferentiating Simmons-Smith reaction, 5775
- 3-t-alkoxy-1,2-glycols, regioselective formation from 2,3-O-alkyldenetriols with trimethylaluminium, 1823
- anti,anti*-1,2,3-triols and *syn*-1,3-diols and (E)-alkenones, prep via synthesis of intermediate 4,6-dialkyl-1,3-dioxins, 1111
- chiral (E)-1-trimethylsilyl-1-alken-3,4-diols via Sharpless asymmetric epoxidation of 1,5-bis(trimethylsilyl)-1,4-pentadien-3-ol, total synthesis lipoxin B, 6297
- chiral butane-1,4-diols enantioselective cyclisation to chiral tetrahydrofurans, synthesis of *trans*-2-(3-methoxy-5-methylsulphonyl-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl)tetrahydrofuran, potent PAF-receptor antagonist, 6211
- chiral glycerol derivs, lipase catalysed asymmetric synthesis leading to synthesis of (S)-propranolol, 5173
- diols cyclisation with phenylthio migration, stereochemical control in synthesis of tetrahydrofurans, 4885
- diols, camphanylboronic acid, optical purity determination, via chiral derivatising agent, 6063
- erythrol, 2-diols, selective synthesis via ichthyotoxic diacylglycerols, umbraculmin A and C, structures and isolation from *Umbraculum mediterraneum*, 3613
- meso*-1,3-diols, enantio-differentiating functionalisation via spiroacetals derived from 1-methone, 3097
- organometallic *meso* diol and corresponding dialdehyde, stereoselective horse liver alcohol dehydrogenase catalysed oxidoreduction, 5769
- pinacol cleavage using iron(III)trisphenanthroline complexes, 3635
- (S)-2-alkoxy-1-(1,3-dithian-2-yl)-1-propanones, diastereospecific addition to organometallics and its application to synthesis of (-)-trachelanthic acid, 3955
- (S)-manoalide diol, synthesis and absolute configuration of natural manoalide, 2401
- syn*-1,3-diols, synthesis via stereoselective reduction of β -alkoxy ketones, 5419
- syn-Z* diol and *anti-E* diol via addition of LiMe_2Cu to *trans* and *cis-Z* vinylloxiranes, diastereoface selectivity, 913
- Dioxanes**
- cis*-4,6-dimethyl-1,3-, and analogous 1,3-dithiane, magnitude of $^1\text{J}_{\text{C-H}}$ for C(2)- H_α and C(2)- H_β bonds, 5627
- Dioxenes**
- 1,4-dioxenyl carbinols, regioselective oxidative cleavage with pyridinium chlorochromate, new prep of α -hydroxy and α -keto acids, 6261
- Dioxetanes**
- xanthylenideneadamantane 1,2-, prep, properties and its use as inherently thermochemiluminescent label, 3137
- Dioxins**
- 4,6-dialkyl-1,3-, synthesis as intermediate for (E)-alkenones, *anti,anti*-1,2,3-triols and *syn*-1,3-diols, 1111
- Dioxiranes**
- dimethyl-, catalysed valence isomerisation of quadricyclane to norbornadiene, 15
- Dioxolanes**
- 2-(2-alkoxyethylidene)-1,3-, synthesis by using 1,3-dioxolane ring as double bond directing group, 3597
- chiral-, synthesis from (-)-shikimate and β -ketoesters, configuration of newly created asymmetric center in dioxolane via $2\text{D}^1\text{H}$ and ^{13}C NMR, 4555
- Dithianes**
- 1,3-, derivs of sterically crowded hydrindanones, reaction with ceric ammonium nitrate to give α,β -unsaturated ketones, 179
- 1,3-, with high chemodifferentiation via conversion of aldehydes and acetals, 3971
- cis*-4,6-dimethyl-1,3-, and analogous 1,3-dioxane, magnitude of $^1\text{J}_{\text{C-H}}$ for C(2)- H_α and C(2)- H_β bonds, 5621
- Dithiols**
- new bis(1,3-dithiole) derivs, prep of extended π -donors for organic metals, 1075
- Dyes**
- 1-[2',5'-dimethoxy-4'-(β -fluoroethyl)phenyl]-2-aminopropane; studies related to ^18F -labelled serotonin receptor ligands, 6537
- 2',3'-dideoxynucleosides, new synthesis for Aids therapy, 1239
- anti-hypertensive indorenate, synthesis, 2825
- antiviral acylnucleosides, synthesis of 9-(hydroxy-alkylamino)guanines, 5995
- AZT analogs, synthesis and biological evaluation against HIV, 3211
- benzoshikonin and benzocycloshikonin, synthesis, 85
- chiral lactams, synthesis using group-selective N-insertion for prochiral ketones, intermediate in benzomorphan synthesis, 151
- compactin and mevinolin, synthesis of chiral synthon for lactone portion, 1255
- didgamin A, B, C and proyldidgamin A, synthesis, 4407
- heterocyclic *ortho*-quinone, baranginin from *Pygmaeopremna herbasea*, structure, 4881
- new tetracyclic system related to aptazapine, synthesis by one-pot double annelation, 6471
- Dyes**
- rhodamine B base(Z), lactonisation reaction, effect of erythromycin A(E), 1119
- Electrochemical reactions**
- anodic dearylation of 2-azetidiones, 1497
- anodic oxidation of cyclo-

- heptatriene into tropone and tropolone, 555
 bioelectrocatalytic reduction of NAD⁺ to NADH on diaphorase modified electrodes, 1551
 biomimetic system, using manganese tetraphenylporphyrin chloride and imidazole as catalysts and acetic acid as proton donor, oxidation of alkanes to alcohols and ketones, 205
 cathodic promotion of Horner reaction, 3007
 chemical cell, single electron transfer, an "all-organic battery", 1507
 cross coupling of organic halides, trichloromethylation and related synthesis of gem-dichloro compds, 1699
 cyclic voltammetry, detn of reduction potentials of cage-structure halogenated derivs and alicyclic and aromatic ketones, 3935
 electro-reduction of sugar oximes, 3699
 mixed Kolbe electrolysis of 3-(cyclopent-2-enyloxy)propionate, synthesis of prostaglandin precursor, 2801
 oxidation of L-phenylalanine by modified Udenfriend system, 2177
 oxidation, catalytic of olefins and ketones based on Ru⁰/Ru⁻¹-H₂S system. 765
 oxidation, new synthesis of 4-acetoxy-2-azetidiones, 1409
 polymerisation of perfluorocycloalkenes, 1295
 reduction of CO₂ in water to oxalic acid and glyoxylic acid, 945
 reversible oxidation of 2,5,8,11-tetra-*t*-butyl-pari-xanthenoxanthene to its radical cation and dication, 4533
- Electron donors**
 new π -, bis(dioxothiacyclopenta)-tetratriafulvalene, 3467
- Electron spin resonance**
 characterisation and generation of cis/trans isomers of a triplet of 8 pi non-Kekule polyene, 2719
 detection of free radicals from N-hydroxypyridine-2-thione esters, 917
 monated cyclohexadienyl radicals, capto-dative interactions, 1437
 N,N,N-dimethyl-p-N¹-(4-methoxyphenyl)-1,4-phenylene-diamine identified in set oxidation of N,N-dimethyl-p-anisidine, 2463
 solid state-, structure and conformation of alkoxy-fluoroalkyl radicals, 4611
 stable localised biradical, 1,3-diphenyl-1,3-cyclopentanedyl, 3753
 study of 1-sila-allyl and 1,1-dimethyl-1-sila-allyl radicals, 3493
- Electron transfer**
 iminium cation, selective generation by photosensitised oxidative reaction, 4153
 photosensitised-, initiated N-debenzylation, convenient and mild approach, 4157
- Electronic control**
vs conformational control in iodolactonisation of 1,6-heptadien-4-carboxylic acid derivs, 1517
- Electrophiles**
 allylic-, Pd-catalysed cyclic acylmetallation, route to cyclopentenone derivs, 6745
 nucleophilic species formed by desilylation of fluorosilyloxiranes by fluoride ion promotes reaction with electrophiles, 5923
 presence of-, reactivity of anion derived from benzophenone benzoylhydrazone, 3581
 reactions with Schiff base anions, role of initial stereochemistry, 2441
 stepwise electrophilic additions with 3-membered cyclic intermediates, mechanistic information via use of steric vs electronic effects, 6207
- Elimination reactions**
 α -, under mild conditions, formation of acceptor substituted phenylnitrenes, 1781
 β -, of aminoborane by lithium-liquid ammonia reduction, 4713
 β -, or carbonylation, coupled with Ni-catalysed intramolecular allylation of addition-addition-elimination pathway, three step, prep of "dimers" of pyrazolidin-3-one-azomethinimines without centre of symmetry, 2939
 nitrous acid-, path for thermal decomposition of nitroalkanes, 2805
 premature β -H-, effect of remote ligand substituent on cobaloxime-mediated radical alkyl-alkenyl cross coupling, 6037
 reductive-, titanium induced, stereoselective synthesis of vitamin A and all trans retinoic acid, 213
 reductive-, titanium induced, stereoselective synthesis of 13-cis-retinoic acid, 209
- Enals**
 homologated pyranosidic conjugated-, efficient route, 5533, 5533
 pentaenals, regioselective photoisomerisation, effect of Me substituents, 853
 use in study on guest selective molecular recognition on an octadecyl silylated silicon surface, 5437
- Enamines**
 and dichlorophenylphosphine, prep of 2-amino-1-phenylphospholes, 4581
 difunctionalised-, synthesis from thioamides via thioiminium salts, carboxyl-modified amino acids and peptides, 2299
 equivalent, use of aminonitrile in cyanide promoted Michael reaction, 6831
 monofunctionalised-, and methyl ketone derivs synthesis from thioamides via episulphides and thioiminium salts, carbonyl-modified amino acids and peptides, 2295
 new salt of-, synthesis of ethyl acetoacetate derivs, 6339
 oxidation to α -hydroxy ketones and α -amino ketones using N-sulphonyloxaziridines, 4365
 simple-, diethylaminocyclohexenes, steric barrier and π -barrier to rotation, conformational studies by dynamic NMR, 3141
- Enantiocontrolled synthesis**
 (-)-protocetinol, 4963
 (-)-bakkenolide-A, 5661
- Enantiomeric purity and enantiomers**
 1-(3-furyl)-1,2-dihydroxyethane optically pure derivs, synthesis, 2459
 2-hydroxymethyl-1-amino-1-cyclopropane carboxylic acid via CN(R,S) method, 3315
 2,3-dihydroxy ketones and 1,2,4-triols, synthesis via baker's reduction of 5-acetyl-2-isoxazolines, 6167
 (4R)-hydroxypyroglutamate, prep and synthesis of (-)-bulgecinine, 329
 asymmetric synthesis via acetal templates, prep of mevinolin analogs, 3757
 chiral aldehydes, resolution and enantiomeric excesses via chiral imidazolines, 2675
 dolichols, via asymmetric hydrogenation of plant polyprenols, 5343
 prostaglandin intermediate, simple route via carbocycles from carbohydrates, 5521
 tritiated enantiomers and inositol (1,3,4)-triphosphate fluorinated analogs, synthesis, 5217
- Enantiomeric synthesis**
 chiral glycine enolate synthons, stereoselective alkylation, enantioselective synthesis of α -amino acid derivs, 6079
 polysubstituted furans via stereoselective intramolecular bromoetherification, 3149
 route to key intermediate in total synthesis of forskolin, 6409
- Enantioselective reactions and synthesis**
 12(R)-HETE applicable to synthesis of leukotriene B₄, 3459
 a carbocation rearrangement in solid state, addition of bromine gas to crystalline dibenzobarrelene, 1485
 α -selenenylation of 2-phenylpropanal, 5889
 β -D-ribofuranosylmalonate, (prospective synthon for C-nucleoside) via high pressure Diels-Alder reaction of furan with di-1-menthyl acetoxy-methylenemalonate, 5397
 aldol reaction of methyl ketones and aldehydes, mediated by chiral lithium amide bases, 337
 and diastereo-selective new synthesis of 2-azetidiones as intermediates of β -lactam antibiotics, 815
 approach to chiral intermediates of sesquiterpene pseudoguanolides, 147
 asymmetric synthesis of (-)-tylophorine, via intramolecular double bond Michael reaction, 4135
 cyclisation of chiral butane-1,4-diols to chiral tetrahydrofurans, synthesis of trans-2-(3-methoxy-5-methylsulphonyl)-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl)tetrahydrofurans, potent PAF-receptor antagonist, 6211
 D-allothreonine and L-threonine via electrophilic amination, 6765
 first enantioselective fluorinating reaction, 6087
 Hantzsch synthesis of dihydro-

- pyridine via metallated chiral alkyl acetoacetate hydrazones, 6437
- hydrolysis of (\pm)-4-acetoxy-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, catalysed by immobilised lipase, 567
- hydrolysis of dialkyl 3-monosubstituted glutarates with pig liver esterase, structure-optical purity relationships, 3951
- inversion in-, of reductions with NADH models bearing same chiral auxiliary, 931
- key intermediate of thienamycin by chemicoenzymatic approach, 1057
- oxidation of trans-stilbene with C₂-symmetric chiral diamine, stereochemistry, 573
- platelet activating factor and its enantiomer via ring opening of glycidyl tosylate with 1-hexadecanol, 4393
- prep of key[ABC] intermediates via asymmetric Michael addition involving chiral imines in steroid synthesis, 4427
- protected α -hydroxy aldehydes and ketones via hydroxylation of metallated chiral hydrazones, 2437
- (+)-pumillotoxin A via reductive iminium ion-alkyne cyclisation, 901
- (-)-retigeranic acid via [2+3] annulation, 3283
- route to key intermediate of ginkgolide B total synthesis, 3201
- sec-allyl alcohols by catalytic asymmetric addition of divinylzinc to aldehydes, 5645
- sesquiterpene (+)-modhephene, via diastereoselective cyclopropanation, 2147
- spiralketal subunit of milbemycins and 22,23-dihydroavermectins, synthesis, 3667
- synthesis and absolute configuration of (-)-pulo'pone by asymmetric intramolecular Diels-Alder reaction, 5885
- synthesis of (-)-alloyohimbane, 4509
- synthesis of biotin, 57
- synthesis of (+)-negamycin, 2373
- synthesis of optically pure isoserine, 2189
- synthesis of 6(R),7(R)-3-cis-9-cis-12-cis-6-acetoxy-7-chloropentadeca-3,9,12-trien-1-yne and its 3-trans-isomer, 681
- synthesis of (R)- and (S)-2-hydroxymethyl-1,4-benzodioxan, 3671
- synthesis of 1-vinyl-1,2-diols, vinyl epoxides and α,β -dialkoxo aldehydes, 5685
- total synthesis of tetraoxacyclic squalenoid venustatriol, 3171
- total synthesis of (-)-preclavulone-A, 995
- total synthesis of (+)-monomarine, 5767
- use of diisopropyl tartrate modified (E)- and (Z)-crotylboronates: reactions with achiral aldehydes, 5579
- Enantioselective synthesis**
- (+)- and (-)-isonitrines from common chiral intermediate, 3311
- chiral-, of 5-hydroxy-L-pipecolic acids from L-glutamic acid, 2231
- D- α,ω -diaminoalkanoic acids, 2019
- (\pm)-hydroxyalkanoic acid esters, biocatalytic resolution, strategy for enhancing enantiomeric specificity of lipase-catalysed ester hydrolysis, 4927
- isomeric 8,9,12-trihydroxyelcosa-5(Z),10(E),14(Z)-trienic acids, 5497
- L-(3R and 3S)-(β -D-ribofuranosyl)-pyroglutamic acids, possible intermediates in C-nucleoside biosynthesis, 375
- spiroketal position of avermectin B_{1a}, 2923
- Ene reactions**
- "activated sulphoxide" with non-activated olefin to give allylsulphonium salt and counter-ion dependent(1,2)- vs [3,2] rearrangement of ylide generated from the sulphonium salt, 6637
- and homo-Diels-Alder reactions of phosphalkynes, 1681
- asymmetric-, catalysed by chiral organo-Al reagent, 3967
- Lewis acid-promoted-, with glyoxylates, application to stereocontrolled synthesis of 22R-hydroxy-23-carboxylate steroid side-chain, 6305
- sequential Claisen-, approach to carbocyclisation, new entry to steroid C/D ring synthon, 5277
- Enolates**
- 2-halocycloheptadienone-, synthesis of 2-substituted tropones, 4723
- chiral imide-, stereoselective alkylation to give optically active α -alkylsuccinates, 6257
- chiral propionamide-, alkylation with epoxides, reversal of predicted facial selectivity, 4245
- chiral tin-, diastereoselective alkylation onto cyclic acyliminium species, asymmetric total synthesis of (-)-supinidone, 6133
- crown-potassium-, complexes, conjugate additions, 6943
- di-, fixed E,Z-titanium and zirconium, of 2-cyclohexene-1-one and 2-cyclopentene-1-one, reactions with chiral aldehydes, 1661
- ketone-, arylic condensation, synthesis of polycyclic phenylethanamines, 1385
- lithium-, regioselective mono-addition to N-carbamoyl-L-pyroglutamates, 4303
- metal perfluoro-1-propen-2-enolate, generation and reactivities, 4119
- oxygen and carbon-acylation by ketenes, 1673
- Enones**
- α -, conjugate addition of alkyl groups in aqueous media under ultrasound, mechanistic aspects, 5373
- α -, conjugate addition of alkyl groups, optimisation under ultrasound, 5369
- and acyl chlorides, allylic halides and benzaldehydes, reaction with Cu and Ti derivs from transmetalation of 2-cyanoethylzinc iodide, 2395
- dienone, conjugated, intramolecular addition of unsymmetrical allylsilane to give fused cyclooctanes, tandem Michael addition/enolate-accelerated Cope rearrangement mechanism, 2773
- dienones, conjugated, stereoselective synthesis, 1045
- new method of β -conjugate addition and β -hydroxyalkylation, 5413
- trisubstituted, 1,4-additions of RCu(OAc)Cl₂.Et₃N₂, new method, promoted cyclisation, 6693
- Erynones**
- α,β -, stereoselective isomerisation to (E,E)- α,β - γ,δ -dienes, 1045
- conversion into phenols, 6873
- E and Z-erynone mixtures via oxy-Cope rearrangement of bis-acetylenic alcohols and enolisation and electrocyclic ring closure to methylenecyclopentenones, 6865
- electrocyclisation to methylenecyclopentenones, 6869
- Enzymes**
- 1-(quinoxalin-2-yl)-alkane-1,2-dithiols and -alkene-1,2-dithiols, model compds for pterin which ligands Mo in oxomolybdenum enzymes cofactor, 1453
- 5-lipoxygenase and Na⁺/K⁺ ATPase, ptilodene, icosanoid inhibitor from *Ptilota filicina*, 1505
- α -homocylirirmycin, glucosidase inhibitor, isolation from *Omphalea diandra*, 6483
- β -galactosidases, catalysed (-)-actinonin, asymmetric synthesis using iron chiral auxiliary, 6509
- A575C, a combined angiotensin converting enzyme inhibitor- β -adrenoceptor antagonist, 799
- adenylate kinase, use in generation of cytidine 5'-triphosphate, 1123
- aminopeptidase B from Ehrlich ascites carcinoma cells, total synthesis of natural inhibitor OF949-III, 3227
- aminopeptidase B inhibitor, total synthesis of OF4949-111, 559
- amylglucosidase inhibitor, synthesis of 6-epicastanospermine and 1,6-diepi-castanospermine and synthesis of L-6-epicastanospermine and L-1,6-diepicastanospermine from D-gulonolactone, 3603
- and chemical synthesis, use in prep of (-)-carba-2',3'-dideoxythymidine and (-)-carba-2',3'-dideoxy-3'-fluorothymidine from (\pm)-endo-5-norbornen-2-ol, 5745
- approach to vitamin D and related compds via potential chiral synthons, 6961
- ATP complexation to synthetic [15]-N₃, macrocyclic polyammonium receptor, 6231
- chemoenzymatic synthesis of conformationally rigid glutamic acid analogs, 6109
- CMP-sialate synthetase-A, behaviour towards of both epimers of 2-deoxy-N-acetylneuraminic acids, comparison with 2- β -methylketoside of N-acetylneuraminic acid, 3643
- combined chemical and enzymatic procedure for synthesis of 1-deoxynojirimycin and 1-deoxymannojirimycin, 4645
- converting-, inhibitors, synthesis, prep of intermediate ethyl (R)-2-hydroxy-4-phenylbutyrate, 423
- cyanohydrins and acylolins, optically active, bio-organic synthesis, 4485
- dehydrogenase, NAD(P)⁺-NAD(P)H model for chemical evolution,

- stereospecific conversion of central chirality into axial chirality, 3079
- diphorase modified electrodes, bioelectrocatalytic reduction of NAD⁺ to NADH, 1551
- E. coli* dehydroquinase, affinity labelling, 6783
- E. coli* shikimate dehydrogenase, specificity towards analogs of 3-dehydroshikimate acid, 6779
- formation of isopeptide bond involving ϵ -amino group of lysine, 5487
- four immobilised-, synthesis of cytidine monophospho-sialic acids 789
- glutamine synthetase, inhibitors, prep of S-phosphonemethyl homocysteines, 6055
- glycerol dehydrogenase from *Geotrichum* as catalyst in asymmetric reduction of ketones, 2453
- hexokinase, generation of D-arabinose-5-phosphate, synthesis of 3-deoxy-D-manno-2-octulosonate-8-phosphate from D-arabinose, 427
- HMG CoA reductase inhibitors, α,α -difluoroketone, 6885
- HMG-CoA reductase inhibitor, synthesis, 929
- HMG-CoA reductase inhibitors, building blocks, 4(R)-silyloxy-6(S)-iodomethyl-tetrahydropyran-2-one and its enantiomer, 2563
- holenzyme mimic for benzoin condensation, γ -cyclodextrin thiazolium salt, 1635
- horse liver alcohol dehydrogenase catalysed stereoselective oxidoreduction of organometallic meso diol and corresponding dialdehyde, 5769
- host model of-, synthesis and esterolytic behaviour, intracavity acetyl transfer in water soluble cyclophane, 6047
- hydroxymethylbilane synthase, pyrromethane cofactor, ¹³C NMR studies, 2591
- inhibitory 1-thioalkyl-2-acylamino-deoxy-sn-glycero-3-phosphocholines, synthesis, 31
- lipase catalysed asymmetric synthesis of chiral glycerol derivs leading to synthesis of (S)-propranolol, 5173
- lipase in organic solvents, asymmetric ring opening of cyclic acid anhydrides, 1717
- lipase, immobilised, catalysed enantioselective hydrolysis of (\pm)-4-acetoxy-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, 567
- lipase-catalysed ester hydrolysis, strategy for enhancing enantiomeric specificity, biocatalytic resolution of (\pm)-hydroxyalkanonic acid esters, 4927
- lipase-catalysed lactonisation of chiral (*w*-1)-hydroxy acids to form diolides in non-aqueous media, 5583
- lipase-lipid complex as resolution catalyst of racemic alcohols in organic solvents, 5133
- microbial-, kinetic resolution of methyl ketone cyanhydrin acetates, 6957
- model of ternary complex in thymidylate synthase reaction which is at same oxidation state as the natural complex, formation of exocyclic methylene intermediate from this model, 5445
- novel mimic of-, thiazolium catalysed α -ketoacid decarboxylation, 6235
- one-step synthesis of dihydroanguarine from protopine, 5625
- papain catalysed one-pot synthesis of tripeptide from three single amino acid derivs, 2907
- penicillin acylase, use for selective N-terminal deprotection in peptide synthesis, 1131
- pig liver esterase optical resolution of bicyclic esters, structural requirements, 2697
- pig liver esterase, enantioselective hydrolysis of dialkyl 3-monosubstituted glutarates, structure-optical purity relationships, 3951
- protein kinase inhibitor, stereoselective synthesis of sphingosine, 3037
- pyrroloquinoline quinone, ¹³C- and ²H-labelled, synthesis, 3709
- renin inhibitors, synthesis and application of peptidic trifluoromethyl alcohols and ketones, 4665
- renin inhibitors, synthesis via application of new diastereoselective synthesis of chiral γ (aminoalkyl)- α -hydroxy- γ -lactones, 3923
- resolution of 2,3-epoxyalcohols as intermediates in synthesis of sex pheromone of Gypsy moth, 2455
- triene carbonate L-660,631 methyl ester, synthesis from cyclooctene, 2279
- undecaprenyl diphosphate synthetase, behaviour towards artificial substrate, formation of (S)-4-methyl deriv of Z,E,E-geranylgeranyl diphosphate, 3807
- Epimerisation**
- alcohols by Ni-containing complex reducing agents, 1383
- Epiculphides**
- and thioiminium salts, synthesis of monofunctionalised enamines and methyl ketone derivs from thioamides, 2295
- Epoxidation**
- alkene-, using Ni complexes of chiral cyclams, 877
- allylic and homoallylic carbamate groups, steric control, 2475
- selective-, of aliphatic and aromatic olefins with *t*-butyl hydroperoxide and a molybdenum oxide chelate, marked effect of catalytic amount of an amine, 2843
- supported catalyst for nucleophilic olefins, 971
- Epoxides**
- 1-phenylsulphonyl-1-phenylthio epoxides, prep, precursors to α -halo S-phenyl thio esters, 4889
- 1,2-, chemo- and regioselective reductive opening via free radical reaction, 819
- 1,2,3,4-diepoxides, reactivity towards nucleophiles, 4405
- 1,3-diene monoepoxides, Pd-catalysed reaction with sodium azide, 1,4-azido-hydroxylation of conjugated dienes, 4851
- α -sulphonyl-, optically active, as precursors of chiral, functionalised homoallylic alcohols, 5929
- alkylation of chiral propionamide enolates, reversal of predicted facial selectivity, 4245
- alkylative-, rearrangement, application to stereoselective synthesis of chiral pheromone epoxides, 865
- asymmetric synthesis of new analogs of cyclosporin amino acid and threo 8-hydroxy- α -N-methyl amino acids, 5205
- bisepoxide, directed cyclisation, use in synthesis of tricyclic polyether fragments incorporating spiroacetal subunit, 5301
- C1-substituted, rearrangement, diastereotopic selection of C₂ hydrogens, rearrangement of styrene oxide, 2575
- chiral-, and allylic alcohols, synthesis by use of optically active *p*-tolyl sulphanyl group as chiral auxiliary, 2851
- direct prep of substituted olefins using lithium tetraalkylcerate, 5165
- ketone epoxides, radical-induced cleavage, 955
- kinetic resolution using organo-Al reagent, new synthesis of C₁-juvenile hormone, 1417
- opening of-, Si-directed, protodesilylation and deuterium labelling of β - and γ -hydroxysilanes, 6395
- oxidative ring opening, prep of α -ketols, 2163
- ring expansion, 5-exo iodonium assisted, synthesis of cyclic ethers, 2093
- selective ring opening with silicon tetrafluoride, prep of fluorohydrins, 4101
- via transfer of oxygen from oxaziridinium salt to ethylenic derivs, 3941
- vinyl-, and silyl-substituted allylic carbonates, Pd-catalysed regioselective reaction, 343
- vinyl-, 1-vinyl-1,2-diols and α,β -dialkoxy aldehydes, enantioselective synthesis, 5685
- vinyl epoxides, cobalt carbonyl and phase transfer catalysis to unsaturated hydroxy acids, 1763
- vinyl-, tin mediated Pd-catalysed regiocontrolled alkylations, 2931
- Esters**
- 1,2,4,5-tetraazinedicarboxylates, reaction with *t*-butylphosphaphethyne to give 1,2³,3¹-azadiphosphole, 5867
- 2-furfuryl methyl fumarate series, comparison of rates of cyclisation, *gem*-dimethyl effect, 2429
- 2-hydroxyalkylpropenoates, nucleophilic conjugate addition of amines, diastereoselection, 2-phosphomethyl acrylates, 3-substituted, via reaction of phosphorus nucleophiles with aldehydes, 5201
- 3-(cyclopent-2-enyloxy)propionate, mixed Kolbe electrolysis, synthesis of prostaglandin precursor, 2801
- 4-keto pimelates, synthesis by Pd-catalysed carbonylative symmetrical coupling of silyloxycyclopropanes, 1541
- 5,10,12-(5E,10E,12E)-octadecatrienoic and 2,7,9-(2E,7E,9E)-pentadecatrienoic esters, intramolecular Diels-Alder reactions, 2685
- α,β -unsaturated-, intramolecular nitrene cycloadditions,

- diastereoselectivity, 2681
- α,β -unsaturated-, stereoselective conjugate additions of sulphoxide stabilised carbanions, 5821
- α -alkylsuccinates, optically active, via stereoselective alkylation of chiral imide enolates, 6257
- α -hydroxy-, oxidation to α -keto esters using Derse-Martin periodinane reagent, 3433
- α -isocynoacetate, asymmetric aldol reaction catalysed by chiral ferrocenylphosphine-gold complex, asymmetric synthesis of threo- and erythro-sphingosines, 239
- α -isocyanocarboxylates, asymmetric aldol reaction with paraformaldehyde catalysed by chiral ferrocenylphosphine-gold complexes, asymmetric synthesis of α -alkylserines, 235
- β,δ -diketo and *syn*- β,δ -dihydroxy-, facile synthesis, 6467
- β -chloro acids and-, synthesis via new Mukaiyama reaction, 1275
- β -keto-, α,α -bisalkylated, Schmidt rearrangement, asymmetric synthesis of α -alkylated α -amino acids, 403
- β -keto-, and ω -ethylenic trifluoromethyl ketones, cyclisation to give 5-membered rings bearing CF₃ group, 1011
- β -keto-, Mn(III)-based oxidative free radical cyclisations to give 7- and 8-membered rings, 5209
- γ -keto-, new prep and new two-alkyne annulation, *in situ* generation of non-stabilised carbene complexes via intramolecular acetylene insertion, 415
- γ -oxo-acrylates, synthesis, 3997
- acetoacetates, cyclisation to α -acyltetronic acids, 4807
- acrylates, (Z)- α,β -disubstituted, new stereoselective synthesis, 659
- alcohols with ester group, new selective oxidation with an oxoaminium salt, 5671
- alkoxy-substituted-, reaction with metal carbene complexes, synthesis of spiroacetals via methanolysis and cyclisation of intermediates, 3357
- alkyl 4-hydroxy-2-alkynoates and 4-hydroxy-2-alkyn-1-ones, reaction with Pd tributylammonium formate and with tributylamine, prep of 1,4-dicarbonyl compds, 1457
- alkyl α -H-perfluoro-, reaction with prim amines to give β -iminoester or tautomer depending on length of perfluoroalkyl chain, 3683
- alkyl cyclopropanecarboxylates, synthesis and use of selenones as precursors, 3269
- alkyl propynoates, mechanistic aspects of reaction with phosphonium ylides, 381
- allenic-, macrocyclisation, simple route to optically active allene macrodiolides, 6129
- allyl acetates and allyl phosphates, Pd-catalysed carbonylation, selective synthesis of β,γ -unsaturated esters, 4945
- allyl-, Pd-catalysed hydroxylamination, synthesis of N-allylhydroxylamines and sec allylamines, 2973
- allylic α -isocyno-, Claisen rearrangement, regioselective allylation of α -isocynoesters at a carbon, 5151
- and amide derive of metaphosphoric acid, generation via photolysis of 2,3-oxaphosphabicyclo[2.2.2]oct-5-ene derive, 2627
- bond of an-, formation between primary OH group of β -D-galactopyranoside with 2-aminoethylphosphonic acid and its methyl substituted derive, 1199
- benzyl-, of α -vinylidenepenam, first prep, 5053
- (-)-camphorsultamaacrylate, asymmetric Ni-catalysed [3+2] cycloaddition with methylenecyclopropane or 2,2-dimethyl-methylenecyclopropane to give 3-methylenecyclopentane carboxylic amides, 529
- chiral acetoacetates, surface enhanced enantiodifferentiation, 4615
- cleavage with bis(tributyltin) oxide, application to deprotection of PCM penicillanate esters, 6893
- di-1-menthyl acetoxymethylmalonate, high pressure Diels-Alder reaction with furan, enantioselective synthesis of β -D-ribofuranosylmalonate, prospective synthon for C-nucleoside, 5397
- dialkyl 3-monosubstituted glutarates, enantioselective hydrolysis with pig liver esterase, structure-optical purity relationships, 3951
- dibenzobarrelene di-, in solid state, di- π -methane photorearrangement, greatly altered regioselectivity, 2041
- dibromomalonate-, reaction with electron deficient olefins in presence of trialkylstilbine to give cyclopropanes, 1033
- dienic conjugated-, via reaction of 1-ethoxy-3-trimethylsilyl-1-propyne with α -haloketones, 3065
- difluoroacetate, Reformatsky reaction with imine, synthesis of 2,3-dideoxy-2,2-difluoro-3-amino sugars and 3,3-difluoro-2-azetidinones, 5291
- dimethyl 1,2,4,5-tetraazine-3,6-dicarboxylate, reaction with 2-vinylindole to form new indolyl-1,4-dihydroxypyridazines and annelated pyridazines, 3927
- dimethyl 2-(4-t-butylcyclohexylidene)methylmalonate, optically active, via Pd-catalysed asymmetric synthesis from *cis* and *trans*-allylic acetates, 2959
- dimethyl (R)S-2-(10-isobornylsulphonyl)malate, chiral synthetic equivalent of dimethyl acetylenedicarboxylate, application to synthesis of carbocyclic nucleosides, (-)-neplanocin A and (-)-aristeromycin, synthesis, 6143
- dimethyl acetonedicarboxylate, selective differentiation of two ester functions, synthesis of 5-substituted-4-hydroxy-3,4,5,6-tetrahydro-2H-pyran-2-ones, 37
- ethyl 4-chloro-3-oxobutanoate, hydrogenation, symmetric synthesis of (R)-carnitine, 1555
- ethyl (R)-2-hydroxy-4-phenylbutyrate, prep and intermediate in synthesis of converting enzyme inhibitors, 423
- ethyl acetoacetate derive, synthesis via new enamine salt, 6339
- ethyl propiolate, low-temp addition to 1,3-dienes via intermediacy of propargyl cations generated from triethyl orthopropiolate, 3407
- ethyl propionate, reaction with ketenealkylsilylacetals, 6443
- ethyl-, conversion via organo-Al reagents to carboxylic acid hydrazides, 739
- functionalised-, and lactones, cerium-mediated Grignard reaction, direct access to functionalised allylsilanes, 5009
- furfuryl E-2(phenylsulphonyl)-acrylates, substituted, intramolecular Diels-Alder cycloadditions, 6059
- (\pm)-hydroxyalkanoic acid-, biocatalytic resolution, strategy for enhancing enantiomeric specificity of lipase-catalysed ester hydrolysis, 4927
- interchange of-, base catalysed, syntheses without solvent, 4567
- isopropenyl-, regioselective synthesis via ruthenium catalysed addition of N-protected amino acids to propyne, 5365
- isopropyl [(2E)-1-(benzyl-oxalkyl)-2-butenyl]oxyacetate, stereoselectivity in [2,3]Wittig rearrangement, prep of potent building blocks for synthesis of polyoxo compds, 4763
- methyl 2-acetamidoacrylate, vitamin B-12 photoelectrocatalysed addition of alkyl bromides and carboxylic anhydrides yields 2-amino esters, 1601
- methyl 3-(2-acyloxy-4-methoxyphenyl)propanoates, regioselective Fries rearrangement, total synthesis of linear acylated coumarins geigerin and dehydrogeigerin, 1311
- methyl 3-oxo-1-cyclohexene-1-carboxylate, [2+2] photo-additions with α,β -unsaturated homo-chiral ketals, 2613
- methyl 7-phenylidibenz[a,j]-anthracene-14-carboxylate and methyl 5-phenylbenzo[1,2-h:5,4-h']diquinoline-3-carboxylate, rigid semi-helical aromatic spacers with convergent functional groups, syntheses and structures, 983
- methyl ketone cyanhydrin acetates, kinetic resolution with microbial enzyme, 6957
- methyl propiolate, reaction with hydroxylamines and effect of N-t-Bu group on cycloaddition of nitrones, 307
- methyl thalacetates, oxidation as a function of S-position using *Saccharomyces cerevisiae*, 435
- methyl-, of new gibberellin, GA₁₁, principal antheridiogen in *Lygodium japonicum*, 3959
- (-)-menthyl phenylglyoxalate, selective addition of keto group to organo-Zn compds, to give (-)-menthyl mandelates, 2175
- mevinic acid analogs, alternative approach from methyl (3R)-3-hydroxy-5-hexanoate, extension to rational syntheses of (+)- (6R)-goniothalamin and its non-natural (-)-(6S)-enantiomer, 4625
- N-carbamoyl-L-pyroglutamates, regioselective mono-addition of

- lithium enolates, 4303
 N-hydroxypyridine-2-thione-, detection of free radicals, EPR 917
 N-succinimidyl-2,4-dimethoxy-3-(tri-N-butylstannyl) benzoate via regio-specifically generated lithium 2,4-dimethoxy-3-lithiobenzoate, 4385
 ortho-, mixed, synthesis, 2023
 oxacyclic carboxylic-, synthesis via methoxy-carbonyloxonium ions, evidence for cationic oxa-Cope rearrangement, 6365
 pentacyclic bis(ketoester) and α -aminobenzaldehyde, sequential Friedlander condensations, 6681
 pyridine carboxylic acids and esters, controlled regioselective oxidation with fluorine, 4389
 reactions with bromotri-fluoromethane in presence of Zn, 1029
 (-)-shikimate and β -keto-, synthesis of chiral dioxolanes, configuration of newly created asymmetric center in dioxolane, 2D1H and ^{13}C NMR, 4555
 silyl-, alkylation, regio- and stereo-selective prep of silyl enol ethers, 1065
 tertiary butyl-, and ethers, new prep, 2483
 thrysieryl-23 acetate, synthesis via deprotection of 2-(trimethylsilylmethoxy)-methylated alcohols, 5417
 trime carbonate L-660,631 methyl-, synthesis from cyclooctene, 2279
 via direct conversion of aldehydes, using bromine as oxidant, 5087
 vicinal diol allyl acetates, Pd-catalysed cyclisation to cyclic ethers, 2927
 \underline{Z} -allylic acetates, synthesis via fragmentation of cyclic homoallylic alcohols, 2119
- Esterification**
 esterification/etherification of porphyrin, 1421
 lipase-lipid complex as resolution catalyst of racemic alcohols in organic solvents, 5133
 ortho-, at anomeric centre, 1-bromo-2,3,4,6-tetra-O-acetyl- β -D-glucopyranosyl chloride, treatment with silver triflate in presence of alcohols, 2651
 reductive-, Rh-catalysed, 1759
 stereoselective intramolecular bromo-, enantiomeric synthesis of polysubstituted furans, 3149
 trans-, of phosphorous esters, Ti-mediated, 3327
- Ethers**
 2-benzenesulphonyl cyclic-, direct substitution using organo-Zn reagents, 4869
 2-bromozincmethyl-2-propenyl-, addition to aldehydes, ketones and imines followed by Pd-catalysed cyclisation, prep of 3-methylenetetrahydrofurans and 3-methylenepyrrolidines, 3579
 α -bromoethyl-, formation via 1-bromoethanol, flash vacuum thermolysis of 2-bromoethanol, 6489
 Y-hydroxy-, synthesis of cyclic acetals via C-H activation, 2215
 alkyl tertio-alkyl-, iodine mediated synthesis, 2445
 allylic- with chiral substituent, asymmetric induction in [2,3]Wittig rearrangement, new entries to stereocontrol over three contiguous chiral centers, 4587
 anti-tricyclo[8.6.0.0^{2,6}.*]hexadeca-7,11-diene-3,16-dione via cycloocta-2,4-diene-1-dione, 653
 aryl allyl-, ortho-substituted, Pd-promoted cyclisation, synthesis of benzofurans, 4687
 benzyl-, fungal removal of O- and N-benzyl groups, 6393
 cyclic-, acetals, prep from 2-benzenesulphonyl derivs, new mild glycosidation, 4873
 cyclic-, and dithio-substituted allylic anions, boron trifluoride promoted reaction, 5939
 cyclic-, functionalised, formation by intramolecular nitrile oxide cycloadditions, 4169
 cyclic β -halogeno-, ring sission with samarium di-iodide, synthesis of (E)- and (Z)-enynols, 6517
 cyclic-, synthesis via 5-exo-iodonium assisted epoxide ring expansion, 2093
 cyclic-, via intramolecular H-abstraction of alkoxy radical intermediates, generated using organoselenium reagents, 5429
 cyclic-, via Pd-catalysed cyclisation of vicinal diol allyl acetates, 2927
 dipropargyl-, Hg-induced cyclisation, regioselective synthesis of 2-(1-aminoethyl)furans, 5029
 enol silyl-, stereochemistry of fluoride-catalysed aldol reaction, another non-chelate transition state, 2207
 enol-, and ketene acetals, triplex-catalysed Diels-Alder and [2+2] cycloaddition reactions, 5125
 enol-, oxidation by metal(VI)oxide diperoxides, 3145
 glycol benzyl-, reaction with thallium nitrate, synthesis of showdomycin analogs, 1841
 glycol-, benzeneselenenate adducts, oxidative ring contraction, synthesis of showdomycin, 2711
 glycol-, monocyclic, carrying two terminal electron-donor groups, intermolecular CT-interaction with TCNQ, effect of potassium perchlorate, 933
 ketoxime-, asymmetric reduction, distinction between anti and syn isomers leading to enantiomeric amines, 223
 lariat-, 18-membered ring steroidal, and lipophilic [2.2.2]-cryptand, aggregation behaviour, 4065
 mono-, of 1,2-glycol, synthesis use of decarbonylation of α -alkoxyacid chlorides mediated by samarium diiodide, 4847
 or alcohols containing benzophenone, irradiation with ketene dithioacetal S,S-dioxide(2), addition of 1-hydroxyalkyl and 1-alkoxyalkyl-radicals to 2 followed by H-transfer, 5387
 oxime-, addition of aryllithium compds, 3455
 p-anisyl-, selective protection at primary OH function of carbohydrates, 1389
 perfluoroalkyl-, peroxy radicals, rate constants for self reactions, comparison with rate constants for non fluorinated analogs, 5557
 phenolic-, Ni catalysed ipso displacement by Grignard reagents to give arenes, 5553
 pyranosidic α -alkoxy vinyl-, acid treatment, prep of homologated conjugated enals for C-glycoside synthesis, 5533
 saicoanin studies, construction of cis-fused drimane unit and synthesis of isosicoanin methyl ether, 6721
 SEM-, cleavage, synthesis of thrysieryl-23 acetate, 5417
 silyl enol-, regio- and stereo-selective prep by alkylation of silyl esters, 1065
 silyl enol-, stereo- and regioselective formation via oxidation of vinyl anions, 4269
 silyl enol-, titanium-catalysed aldol-type condensation with 2-arylacetaldehyde, prep of polycyclic aromatic hydrocarbons, 3885
 silyl-, 1,2-anti diastereo-selective reduction of 2-alkyl-3-hydroxy ketones, 1021
 spirocyclic-, and lactones, stereocontrolled synthesis from N-methyl-4-piperidone and 3-quinuclidinone by phenylthio migration, 5321
 t-butylidimethylsilyl-, reductive cleavage with NaH, 6161
 tertiary allylic-, [2,3] Wittig rearrangement, application to synthesis of C₁₂-C₁₈ subunit of zincophorin, 6905
 tertiary α -lithio-, diastereo-selective [2,3]Wittig rearrangement, 6901
 tertiary butyl-, and esters, new prep, 2483
 trimethylsilylpropargyl-, low pressure flow pyrolysis, prep of trimethylsilylallenes, 609
 vinyl-, clay-catalysed [2+2] and [2+4] cycloadditions of N-benzeneseleninate aniline to give tetrahydroquinolines and azetidines, 547
 vinyl-, exocyclic, derived from quinols yield spirodienones via thermal [1,3]-O-to C migration, 3441
 vinyl-, via alcoholysis of vinylidenecyclohexadiene ipso adduct isolated by photolysis of 1-(p-ethoxyphenyl)vinyl bromide, 6141
- Etherification**
 esterification/etherification of porphyrin, 1421
- Exchange reactions**
 exchangers and accumulators of carbon radicals, role of organic tellurides, 6581
- Extrusion**
 nitrogen-, from 4,5-diazatri-cyclo[4.4.0.0^{2,6}.*]dec-4-ene by UV-laser photochemistry, lifetime determination of bicyclo[2.2.2]octa-2,5-diyl by dioxygen trapping, 6605
- Flavanoids**
 flav-3-enes, synthesis by Claisen rearrangement, 6797
- Flavins**
 lampero-, bioluminescent compd from *Lampteromyces japonicus*, 1169
- Flavones**
 planar-, and quinones, hindered carbonyls, ^{13}C NMR data, 2143

Fluorescence

- 3-aryl-2-(2-furyl)-chromones, functionalised, synthesis and photoactivation, 69
- o*-nitrobenzyl-quenched carbamates, synthesis and photoactivation, 65
- photoactivable fluorophores, synthesis and activation of functionalised 3-aryl-2-(2-furyl)-chromones, 69
- tricyclic nucleoside isolated from phenylalanine transfer ribonucleic acids, access to synthesis of wybutosine, 4129

Forylation

- and lactamisation of 1,3,6H-thiazines by application of oxidative ring opening of 2-pyrazolines, 6249
- reductive-, of oximes, synthesis of isonitriles, 3343

Fragmentation

- 4a-acetoxy-6-methoxy-2-methyl-7-oxo-1,2,3,4,4a,7-hexahydroisquinoline, 3815
- β -, of bicyclic carbonolamides leading to imides, use of hypervalent organoiodine reagents, 6661
- and thermal rearrangements and methanol additions of oxazole endoperoxides, 1007
- cyclic homoallylic alcohols, synthesis of \bar{Z} -allylic acetates, 2119
- fragmentation-addition vs cycloaddition in reaction of dienes and homo-dienes, with phenyl(tolylsulphonyl)acetylene, 831
- Hofmann-like-, of 1-methyl-1-aza-4-cyclanones induced by *N*-acylation, use in synthesis of 2-aza-decalones and 2-azahydronanones, 3303
- photo-, of 4-alkylpyrimidines and 2-alkylquinolines, 6853
- tandem β -, intramolecular functionalisation of alkoxy radicals, mechanistic aspects, 5979

Fulvenes and fulvalenes

- 3-bromo-6-dimethylamino-1-azafulvene dimer, lithiation, synthesis of 4-mono- and 4,5-disubstituted pyrrole-2-carboxaldehydes, 3215
- 5-azoniafulvene ions, [$\pi+4\pi$] cycloadditions with nitrones and azomethine imines, 4415
- 6,6-dimethylfulvene, functionalisation, a fulvene analog of the aldol condensation, 4997
- 6-dimethylamino-1-azafulvene dimer, lithiation, synthesis of 5-substituted pyrrole-2-carboxaldehydes, 777
- bis(dioxothiacyclopenta)-tetrathiafulvalene, synthesis and physical properties, 3467
- fulvene cycloadditions in water, influence of rate and selectivity, 3477
- unsymmetrically substituted tetrathiafulvalene and tetraselenafulvalene, radical cation salts, synthesis and characterisation, 2185

Fungicides

- peptide part of jaspamide, cyclodepsipeptide from marine sponge, synthesis, 6465
- sesquiterpenes, fungitoxic (\pm)-chokol A, synthesis, 1207

terbinafine, synthesis, Pd-catalysed vinyl iodide-ethynylstannane coupling, 1509

Furanones

- 2(5H)-, and maleate electrophores, radical cyclisations leading to spiro- and linear-fused γ -lactone ring systems, 3869
- 3(2H)-, new synthesis via carboxylation-decarboxylation sequence, 5941
- 5-menthyloxy-2[5H]-, via asymmetric 1,3-dipolar cycloadditions, 5317

Furans

- 1-(3-furyl)-1,2-dihydroxyethane optically pure derivs, synthesis, 2459
- 1-alkenythieno[2.3-c]-, intramolecular Diels-Alder reaction, synthesis of tetrahydronaphtho[2.1-b]thiophene, 1137
- 2,3-dihydro-, substituted, synthesis via reactivity of monothio- and monoseleno-acetals towards oxidation, 2179
- 2,4-cis and 2,4-trans tetrahydro-, derivs, stereoselective synthesis via mono- or dichloromethyl radical by radical cyclisation, 321
- 2-(1-aminoethyl)-, regioselective synthesis, Hg-induced cyclisation of dipropargyl ethers, 5029
- 2-alkyl-, and 3-fluorobenzene, regioselective Diels-Alder cycloaddition, 6227
- 2-lithiated-, derived from higher order cyanocuprates, scope, limitations and synthetic utility, 3045
- 2-(*R*)- and (*S*)-benzyloxy-2,5-dihydro-4-(3,4-methylene-dioxybenzoyl)furan, diastereoselective conjugate addition of benzyl anions, total synthesis of lignans(-) and (+)-burseran, (-)-cubebin, and (-)-hinokinin, 3599
- 2-silyl-4-stannyl-, Pd-catalysed coupling with allylhalide and CO, synthesis of manoolide and secmanoolide, 1173
- 2-vinyl-, intramolecular Diels-Alder cyclisations to form furanodecalins, 2107
- 3-acyl-4-methyl-, synthesis of (\pm)-evodone, 4995
- 3-methylenetetrahydro-, and 3-methylenepyrrolidines, prep by addition of 2-bromozincmethyl-2-propenyl ethers to aldehydes, ketones and imines followed by Pd-catalysed cyclisation, 3579
- 3,4-disubstituted-, approach via regioselective formation of 4-lithio-2-(*t*-butyldimethylsilyl)-3-hydroxymethylfuran, 1247
- and 2-methyl-, Mannich reactions using pre-formed imonium salts, 2377
- bis(tetrahydrofuran) moiety(C-1 to C-9) of mycotoxin (+)-asteltoxin from *Aspergillus stellatus*, stereoselective synthesis, 655
- chiral tetrahydro-, enantioselective cyclisation to chiral butane-1,4-diols, synthesis of trans-2-(3-methoxy-5-methylsulphonyl-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl)-tetrahydrofurans, potent PAF-receptor antagonist, 6211
- chromium carbene complexes of-, reaction with alkynes, synthesis of cyclopentanones, 3403

- derivs, approach via I_2 -induced cyclisation of 2-alkenyl substituted 1,3-dicarbonyl compds, 4987
- diether of-, [2,3] Wittig ring contraction, synthesis of possible precursor of pseudopterane lactone diterpene kallolide, 741
- furan-diene, intramolecular Diels-Alder reaction rate, effect of anchoring substitution, 2493
- furfuryl E-2(phenylsulphonyl)-acrylates, substituted, intramolecular Diels-Alder cycloadditions, 6059
- high pressure Diels-Alder reaction with di-1-menthyl acetoxyethylselenonate, enantioselective synthesis of β -D-ribofuranosylselenonate, prospective synthon for C-nucleoside, 5397
- intramolecular Diels-Alder reaction of-, high pressure-mediated, factors controlling cycloaddition with monoactivated dienophiles, 5017
- intramolecular Diels-Alder reaction with doubly activated dienophiles, stereochemistry, 5825
- muscarines, total synthesis using stereospecific photo ring expansion of a cyclobutanone, 159
- polysubstituted-, enantiomeric synthesis via stereoselective intramolecular bromoetherification, 3149
- terminated cationic cyclisation, approach to guaianolides and pseudoguaianolides, 4521
- tetrahydro-, and tetrahydropyrans, optically active, formation via Wittig reactions of unprotected aldohexoses, 693
- tetrahydro-, hydroxy-substituted, stereoselective synthesis, 2011
- tetrahydro-, stereochemical control in synthesis, cyclisation of diols with phenylthio migration, 4885
- tetrahydro-, trans-2,5-diaryl-, antagonists of platelet activating factor, indicative of dual binding modes to PAF receptor, 2899
- tetrahydro-, two, linking two by V^{5+} catalysed oxidation of C_{30} -tetraene tetraol deriv, stereoselective synthesis of teurilene, 5947
- unsymmetrically substituted-, use in furan-carbonyl photocycloaddition, synthesis of a kadsurenone-ginkgolide hybrid, 6689
- vinylidihydro-, and vinylcyclopropanes, optically active, via Pd-catalysed asymmetric intramolecular allylation, 669

Geological data

- C_{30} sedimentary hydrocarbons, highly branched, synthesis, 3837
- geochemical significance and synthesis, molecular fossils, structure, chlorophyll c of 17-nor-DPEE series, 371
- porphyris with 6-membered exocyclic rings, synthesis by Macdonald condensation and the a,b-biladiene route, 6877

Geometry

1-methyltricyclo[2.2.2.0^{2,4}]-octane-3,5-dione, synthesis and desymmetrisation, 269
 anti-sesquiterpene, ground-state of double bond either pyramidal with low barrier to inversion or planar based on ¹³C NMR and theoretical results, 19
 [n.1]-metacyclopentadienes, photophysical and photochemical properties 4377
 retinoid side chain, extreme twisting, 11-t-butyl retinoids by catalysed isomerisation of β -allenic retinals, 1251

Germanium

free singlet dimethylgermylene Me₂Ge, cycloadditions with alkenes, 5245
 tetrakis(2,6-diethylphenyl)-digermene, cycloaddition, 3383

Gibberellins

12-hydroxy-, GA₁₁, GA₁₂, and GA₁₃, synthesis, 2727
 A₁, synthesis of antheridic acid, diterpenoid phytohormones, 3339
 new-, GA₁₃, methyl ester, principal antheridiogen in *Lygodium japonicum*, 3959

Glycols

activated-, stereoselective glycosidation with C1-oxygenated allylsilane, synthesis of *cis*-pyrano[2,3-b]pyran, 4517

Glycosidation

C-, of phenols with glycosyl fluoride under Lewis acid conditions, rearrangement of O-glycoside to C-glycoside, 6935
 new mild-, prep of cyclic ether acetals from 2-benzenesulphonyl derivs, 4873
 new reaction, application to total synthesis of mycinamycin IV and VII, 3575
 new reaction, combination of Cp₂MgCl₂-AgClO₄ for activation of glycosyl fluorides, β -selective glycosidation of D-mycosose, 3567
 new reaction, prep of 1-fluoro-D-desosamine deriv and its glycosidation via Cp₂HfCl₂-AgClO₄ as activator, 3571
 simple metal-free 2'-discriminated glucosidation procedure, 4597
 stereoselective-, of activated glycals with C1-oxygenated allylsilane, synthesis of *cis*-pyrano[2,3-b]pyran, 4517

Glycosides

2-trimethylsilylethyl-, anmeric deblocking yielding pure deblocked mono- and di-saccharides, 361
 ω -unsaturated-, of 2-bromo-2-deoxy-glycopyranosides, cyclisation to glycals, prep of anthraquinone C-, prep via bifunctional reagent available from anthrarufin, 6909
 C-, synthesis via homologated conjugated enals from acid treatment of pyranosidic α -alkoxy vinyl ethers, 5533
 ergostane-, new class from *Tubocapsicum anomalum*, 673
 O-, rearrangement to C-glycoside, C-glycosidation of phenols with glycosyl fluoride under Lewis acid conditions, 6935
 tetrameric iridoid glycosides, structure and isolation of sambacosides A, E and F from

Jasminum sambac*, 1793*Glycosylation**

C-, of substituted heterocycles under Friedel-Crafts conditions, two-step synthesis of thieno[3,4-d]pyrimidine C-nucleoside analog of inosine, 3537
 efficient O-, use of thio-glycosides and benzeneselenenyl triflate as promoter, 1061
 stereocontrolled-, dimeric Co^X antigen, 111³V²Pu₂nCo₂Cer:pivaloyl as auxiliary for, 5267
 stereoselective-, of ceramide derivs, approach via use of pivaloyl group as stereocontrolling auxiliary, 4097
 stereoselective-, of N-acetylneuraminic acid aided by a phenylthio substituent as stereocontrolling auxiliary, 3987

Glyoxalins

Lewis acid-promoted ene reaction of-, diastereoselective, application to stereocontrolled synthesis of 22R-hydroxy-23-carboxylate steroid side-chain, 6305

Gold and compounds

chiral ferrocenylphosphine-gold complex, catalysed asymmetric aldol reaction of α -isocyanacetamides with aldehydes 6321
 chiral ferrocenylphosphine gold, catalysed asymmetric aldol reaction of isocyanocarboxylates with paraformaldehyde, 235
 chiral ferrocenylphosphine gold, catalysed asymmetric synthesis of threo and erythro sphingosines via asymmetric aldol reaction of α -isocyanacetate, 239

Grignard reagents

1,4-addition to 3-substituted 5-trimethylsilyl-2-cyclohexenones, 325
 and lithium reagents, regioselective additions to 2-[(benzylidene)amino]benzotrile and 2-[(diphenylmethylene)-amino]benzotrile, 4265
 and (Z)-1,4-di(2-tetrahydropyran-2-yl)-but-2-ene, 4-carbon homologation to homoallylic alcohols, 3373
 aryl-, coupling in presence of 2,3-dichloropropene, 1293
 benzylic-, reactions with benzylic aryl sulphoxides, sensitive nature of ligand coupling and pseudorotation to electronic effect of substituent-ligand coupling, 4441
 EtMgBr, stereoselective desulphinylation of sulphinylaziridines, synthesis of (Z)-N-arylaziridines, 4093
 conjugate addition to α,β -unsaturated ketones mediated by diamine zinc(II) monoalkoxides, 3593
 Cp₂TiCl₂-catalysed reaction with isocyanates, formation of reduction-coupling product of isocyanates, 651
 Ni catalysed ipso displacement of phenolic ethers to give arenes, 5553
 Ni-catalysed coupling with 6-alkyl-3,4-dihydro-2H-pyrans, stereoselective synthesis of trisubstituted alkenes, 2353
 (NMCp)₂TiCl₂-catalysed reduction of aliphatic, aromatic and α,β -

unsaturated ketones, 4113
 reaction of functionalised esters and lactones, cerium-mediated, direct access to functionalised allylsilanes, 5009
 reactions with allylic and vinylic sulphoxides, retention of geometric configuration of allylic and vinylic groups; ligand coupling through α -sulphurane, 4445
 vinylsilyl-, as aryne traps, new route to (aryllkenyl)silanes, 885

Halogenation

bromination, regioselective, improved synthesis of 2-substituted 1,4-dihydropyridine derivs, 6835
 chlorination, photo-decarboxylative, of carboxylic acids and their benzophenone oxime esters, 6287
 fluorination at C5' of nucleosides, synthesis of new class of 5'-fluoro-5'-*S*-aryl(alkyl)thionucleosides from adenosine, 5729
 fluorination of substituted veratroles via regioselective mercuriation, 1501
 fluorination, first enantioselective, 6087
 fluorination, new anhydrous systems, combination of crown-ethers and cesium fluoride, relative rate study, 4669
 iodination at C-5 of uracil nucleosides, cerium(IV) catalysed, 2855
 oxychlorination of alkenes by chlorochromate reagents, prep of α -chloroketones and competition by substituent-directed oxidation, 6707

Halogens

bromine as oxidant, use in direct conversion of aldehydes to esters, 5087
 bromine gas, addition to crystalline dibenzobarrelene, an enantioselective carbocation rearrangement in solid state, 1485
 effect on reaction of N-haloimides with 1-methylpyrrole, 2405
 exposed amino, azido, bromo or cyano groups in functionalised siloxy-anchored monolayers, 5593
 fluoride ion, macrocycles containing tin as small exclusive host, 4261
 fluorine ion induced reaction of phenylthiomethyltrimethylsilane with aldehydes and ketones, formation of β -hydroxyphenylsulphides, 3319
 fluorine, controlled regioselective oxidation of pyridine carboxylic acids and esters, 4389
 halogens and benzeneselenenyl chloride, reactivity towards α -arylseleno-aldehydes, 5893
 iodine mediated synthesis of alkyl tertio-alkyl ethers, 2445
 iodine, hypervalent organo-reagents in β -fragmentation of bicyclic carbonamides leading to imides, 6661
 iodine, hypervalent, oxidation of amines using Iodosobenzene, synthesis of nitriles, ketones and lactams, 6913
 iodine-induced cyclisation of 2-alkenyl substituted 1,3-dicarbonyl compds, approach to furan derivs, 4987

- PhIO.HBF₄ complex and silyl enol ethers, use in new C-C bond formation in Adg reactions, 3703
- Herbicides**
 diazadibenzo-30-crown-10 deriv and diquat, molecular complex between, solid state structure, 1573
 diazadibenzo-30-crown-10 derivs as receptors for diquat, 1569
 N-(alkoxyethyl)-2,6-disubstituted anilines, prep via ring opening of N-aryl-2-oxazolidinones by anhydrous alkoxide, 5095
- Hormones**
¹⁴F-labelled serotonin receptor ligands related studies of 1-[2',5'-dimethoxy-4'-(β-fluoroethyl)phenyl]-2-aminopropane, 6537
 C₁₄-juvenile-, new synthesis via kinetic resolution of epoxides using organo-Al reagent, 1417
 dilactam of L-α,Y-diaminobutyric acid and D-glutamic acid, a 8-turn template, prep of derivs of 3(S)-amino-10(R)-carboxy-1,6-diazacyclodeca-2,7-dione, 5057
 diterpenoid phyto-, synthesis of antheridic acid from gibberellin A₁, 3339
- Host molecules**
 macrocycles containing tin, small exclusive host for fluoride ion, 4261
 redox-active-, new hydrophobic macrocyclic, with four ferrocenyl groups and a novel twelve ferrocenyl group containing analog, synthesis, 2349
- Hydrazides**
 2-halobenzo-, N',N'-disubstituted, intramolecular cyclisation, prep of stable indazol-3-ylidene oxides, 697
 acyclic-, methoxymethyl substituted, cyclisation to cyclic hydrazides via intermediate N,N-di(methoxycarbonyl)hydrazinium compds, 6975
 carboxylic acid-, new synthesis via organo-Al reagents, 739
- Hydrazines**
 and azo compds from o-diphenylphosphinoyl arylhydroxylamines, 1777
 crown ethers with hydrazine moiety, synthesis, 5589
 reaction with dinitroalkanes to give pyrazole, 6001
- Hydrazones**
 α,8-enone N1,N-dimethyl-, or oximes, reductive coupling promoted by TiCl₄-Mg complex, new pathway to 5-alkenyl-δ¹-pyrrolines, 3263
 α,8-unsaturated-, intramolecular [4+2] cycloaddition, route to annelated pyridines, 6349
 benzhydrazones, thermolysis in presence of Cu, 811
 benzophenone benzoylhydrazone, derived anion, reactivity in presence of electrophiles, 3581
 metallated chiral alkyl acetoacetate hydrazone, enantioselective Hantzsch synthesis of dihydropyridine, 6437
 metallated chiral-, hydroxylation, enantioselective synthesis of protected α-hydroxy aldehydes and ketones, 2437
- trifluoroacetylated-, cyclisation, synthesis of 4-trifluoromethylpyrazoles, 5281
- Hydrindanes**
 (+)-bakkenolide-A, enantiocontrolled synthesis, 5661
 sterically crowded hydrindanones, 1,3-dithiane derivs, reaction with ceric ammonium nitrate to give α,β-unsaturated ketones, 179
- Hydrocarbons**
 allenic-, carbopalladation, use of vinyl trifluorosulphonates, 4089
 aromatic-, quantitative regioselective nitration in the lab, 5657, 5909
 bicyclo[p.1.0]piphidrocabons, ten classes and their anions and cations, electronic rules from structural formulae, 889
 C₈₀, sedimentary-, highly branched, synthesis, 3837
 dodecahedrane, design of precursor all cis-C₈₀-hexaquinane, 3607
 dodecahedrane, new approach, short simple design of quinane 'roofed' poluquinanes, 5309
 from sec alcohols, access to via reduction of dithiocarbonates, with n-Bu₄SnH-Et₃B, 6125
- Hydrogenation**
 asymmetric, catalytic, of β-disubstituted α-phenylacrylic acids, asymmetric synthesis of carboxylic acids containing two vicinal chiral carbon centers, 5969
 asymmetric-, homogeneous, synthesis of statine and analogs, 6327
 asymmetric-, of activated ketones catalysed by new chiral peralkyl-AMPP Rh-complexes, 3675
 asymmetric-, of plant polyprenols, synthesis of dolichols, 5343
 asymmetric-, rhodium complexes of unsymmetrised and symmetrised DIOP analogs bearing p-dimethylamino group, more effective than DIOP, 4755
 cis-, of 1-alkynyl-diisopropoxyboranes, new prep of Z-1-alkenylboronates, 2635
 selective-, of alkynes in presence of alkenes and alkenes in presence of other functional groups, via complex of Pd and silylidenes ethylene diamine, 5545
 transfer-, of olefins, simple flow reaction, 5599
 transfer-, stereospecific conversion of nitro alkanes into amines, 5733
- Hydrogenbonding**
 thermodynamically based scale of solute H-bond acidity, 1587
- Hydrolysis**
 1,3-dithiane derivs of sterically crowded hydrindanones, reaction with ceric ammonium nitrate to give α,β-unsaturated ketones, 179
 acyclic and 6-ring thiophosphate esters, phosphorane intermediates, 2081
 alkaline-, of 2-deoxy-1,3,4,6-tetra-O-acetyl-2-trimethylammonio-α-D-glucopyranose chloride, 2047
 chemoselective-, of amides by tetrahydrophthalic anhydride, 6553
 chemoselective-, of nitriles by tetrahydrophthalic acids, 6557
 enantioselective-, of dialkyl 3-
- monosubstituted glutarates with pig liver esterase, structure-optical purity relationships, 3951
 enantioselective-, of (±)-4-acetoxy-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methylisoquinoline, catalysed by immobilised lipase, 567
 ester-, lipase-catalysed, strategy for enhancing enantiomeric specificity, biocatalytic resolution of (±)-hydroxy-alkanolic acid esters, 4927
 hydrozirconation-isocyanide insertion-, conversion of alkynes and alkenes into one-carbon homologated aldehydes, 1631
 nitrophenyl acetates, pH dependence and regioselectivity using dimethyl-β-cyclodextrin bearing imidazolylethyl group as catalyst, 311
 pig liver esterase optical resolution of bicyclic esters, structural requirements, 2697
- Hydroxylamines**
 N-allyl-, and sec allylamines, synthesis via Pd-catalysed hydroxyamination of allyl esters, 2973
 N-allyl-N-aryl-, and N-allylanilines, synthesis via reaction of nitroarenes with allyl magnesium chloride, 2251
 o-diphenylphosphinoyl aryl-, prep of hydrazines and azo compds, 1777
 reaction with methyl propiolate, effect of N-t-Bu group on cycloaddition of nitrones, 307
 via addition of organo-Li reagents to aldoximes, 3455
- Hydroxylation**
 1,4-azido-, of conjugated dienes, Pd-catalysed reaction of 1,3-diene monoepoxides with sodium azide, 4851
 activity of water-soluble manganese porphyrin associated with potassium hydrogen persulphate, formation of 8-hydroxyadenosine-5'-monophosphate from AMP, 6615
 benzylic-, new entry to synthesis of 8-hydroxytyrosines, 5177
 C-, of tetraphenylporphyrin, introduction of functionality oriented towards porphyrin centre, 1597
 metallated chiral hydrazone-, enantioselective synthesis of protected α-hydroxy aldehydes and ketones, 2437
 regio- and diastereoselective-, of N-t-butoxycarbonyl-L-pyroglutamate monoacetate to optically pure (4R)-hydroxy-pyroglutamate from which (-)-bulgocine was synthesised, 329
 regioselective-, of β-lactams by fungus *Beauveria sulfurescens*, 6611
 regioselective-, of acyclic monoterpene alcohols by *Aspergillus niger*, 579
 stereoselective amino-, of double bond of 7-oxabicyclo[2.2.1]hept-5-en-2-yl derivs, remote substituent participation in acid catalysed decomp of aziridines and triazolines, 3695
 symmetric cis-di-, of olefins with osmium tetroxide using C₂ asymmetric chiral diamine, mechanistic aspects, 573

Imidazoles

2-imidazoline ring incorporated as amide bond replacement into pseudopeptides, a pseudotriptide and pseudopentapeptide enkephalin analogs, 3853

5-nitro-, 1-methyl-2-substituted, rearrangement to 4-nitroimidazoles via CH_2 as catalyst, 5361

5-nitro-, 1-methyl-2-substituted, rearrangement to 4-nitroimidazoles via CH_2 as catalyst, 5361

α -lithio-imidazolines, condensation reactions, prep of conjugate additions of 2-alkenyl-2-imidazolines, 5001 and thiazole metabolites from *Aplydium pliciferum*, 1099

chiral imidazolidines, resolution and enantiomeric excesses of chiral aldehydes, 2675

dihydroxyimidazoline, X-ray structure and isolation of intermediate in synthesis of *glucosaminol* from glyoxal and urea, 1015

dimethyl- β -cyclodextrin bearing imidazolylethyl group, catalytic properties; hydrolysis of nitrophenyl acetates, pH dependence and regioselectivity, 311

gem-nitro imidazolyl alkanes $\text{S}_{\text{RN}}1$ reaction, nitro group replacement by nitronates to give imidazoles with *t*-alkyl chain on position 1, 2567

imidazolidines, acetals and oxazolines as chiral auxiliaries, diastereoselective conjugate addition, 4411

imidazolines and imidazolones via iodocyclisations of allylamidines and ureas, 3001

imidazolines, annulation, synthesis of imidazo[1,2-*a*]pyridones, 5005

(poly)functionalisation and conversion to imidazolones via metallation, 3411

via ring transformation of 5-acylaminoacids and 5-acylamino-pyrimidine-4(3H)-ones, 4607

Imides

N-arylmaleimides, tandem 1,3-dipolar cycloadditions with cyclohexane, entry to substituted tetrahydro-2H-isoxazolo[2,3-*b*]isoxazoles, 3331

N-bromosuccinimide, oxidative demethylation of conessine, 359

N-haloimides, reaction with 1-methylpyrrole, effect of halogen, 2405

N-methyl-naphthylimide radical anion, cycloaddition of photochemically generated phenylcyclopropane radical cation, mechanism, 513

sodium phthalimide, photoaddition to alkenes and alcohols, 1071

via use of hypervalent organoiodine reagents in β -fragmentation of bicyclic carbonolamides, 6661

Imines

α , β -epoxy-, chiral, in ketene-imine cycloadditions leading to homo-chiral 3-aminoazetidiones, application, asymmetric synthesis of β -lactam antibiotics, 5065

α -methyl α , β -unsaturated-, conversion to corresponding aldehydes, 3895

β -allenic *N*-alkylimines, conversion into 1-alkyl-1,2,3,6-

tetrahydropyridines via silver nitrate and then by sodium borohydride, 6609

allylic sulphilimines and phosphinimines, contrasting thermal reactions, 5353

and aldehydes and ketones, addition of 2-bromocinnemethyl-2-propenyl ethers followed by Pd-catalysed cyclisation, prep of 3-methylenetetrahydrofurans and 3-methylene-pyrrolidines, 3579

and diimines, reaction of methanimine with perchlorobutyne to give *N*-alkylidene-ynamines, 5355

arylimines, Lewis acid promoted photocyclisation directed towards synthesis of pentacyclic natural products, 5213

asymmetric additions of α -sulphoxide carbanions, 6101

azomethine imines, and nitrones, [6 π +4 π] cycloadditions of 5-azoniafulvene, 4415

chiral-, involved in asymmetric Michael addition, enantioselective prep of key[ABC] intermediates for steroid synthesis, 4427

chiral-, involved in asymmetric Michael addition, stereochemical data in support of cyclic-like transition state, 2667

epoxide of-, rearrangement, formation of substituted piperidines, stereoselective synthesis of (+)-solenopsin A, 4977

epoxy-, rearrangement, formation of heterotropene derivs, 4973

iminophosphane, [n+1] cycloaddition, new route to λ^5 -phospholenes and λ^5 -phosphirenes, 605

N-aryl methanimines, stable monomeric via reaction of *t*-butyl-6-methylaniline with paraformaldehyde, 5875

N-methoxycarbonyl-, of α -methoxy carbamates, nucleophilic addition to enolate anions, new synthesis of β -amino acids, 231

N-phosphinoyl and *an*-sulphonyl-, direct prep via aromatic aldehydes, 3725

N-tosyl-, derived from enolisable aldehydes, generation and intramolecular cationic cyclisations, 3891

N-trialkylsilyl-, enolisable, synthesis using vacuum gas-solid reactions, 1287

N-(trialkylstannyl)methyl-, transmetalation, new method for generation and cycloaddition of 2-azaallyl anions, 761

prochiral-, and ketones, stereoselective reduction by chiral 1,4-dihydropyridine (NADH-mimic), 5617

reaction with sodium hydrogen telluride, mechanism, 2571

reductive dimerisation in a Pb/Al bimetal redox system, 3811

Reformatsky reaction with difluoroacetate, synthesis of 2,3-dideoxy-2,2-difluoro-3-amino sugars and 3,3-difluoro-2-azetidiones, 5291

simple-, cycloaddition with activated dienes leading to amino sugars; "chelation controlled" diastereoselectivity in addition to an α , β -dihydroxy imine protected as a ketal, 4653

Iminium salts

ω -unsaturated iminium salts, dissolving metal reduction with samarium diiodide in presence of

camphorsulphonic acid to give α -amino radicals, 6685

alkylthiomethyleniminium salts, selective reduction by with trimethoxysilane and dilithium 2,3-butadiolate, new entry into *S,N*-acetals, 5771

cyclic acyliminium species, diastereoselective alkylation of chiral tin enolates, asymmetric total synthesis of (-)-supinidine, 6133

iminium cation, selective generation by photosensitised oxidative reaction, 4153

N-alkoxycarbonyl iminium ions, reaction of ions with propargyltrimethylsilane, oxazinone vs allene formation, 367

Iminium salts

iminium ions derived from aryl amines and aldehydes function as heterodienes and not as heterodienophiles with cyclopentadiene to give tetrahydroquinolines, 5855

pre-formed iminium salts, use in Mannich reactions of furan and 2-methylfuran, 2377

Immunodeficiency compounds

antiviral agents, total stereoselective synthesis of 3'-azido-3'-deoxythymidine and 3'-azido-2',3'-dideoxyuridine, from *D*-mannitol, 5349

Immunosuppressive compounds

cytosporin A, studies of cyclophilin binding domain of CaA, 6577

FK-506, C-10 to C-18 segment, diastereospecific non-racemic synthesis, 277

FK-506, C-20 to C-34 segment, diastereospecific non-racemic synthesis, 281

FR 900483 from a fungus, new immunomodulator, structure and isolation, NMR data, 1725

lanthipeptin, new and effective against *Herpes simplex* virus, structure and comparison with Ro 09-098 and immunopotentiating peptide, 4771

new immunomodulating peptide isolated from a fungus, structure and synthesis of FR900490, 5147

Inclusion compounds

8-membered ring di- and trienones in a crystalline inclusion complex, control of photoreactions with optically active 1,6-di(*o*-chlorophenyl)-1,6-diphenylhexa-2,4-diyne-1,6-diol, 653

complexes of pyridones and optically active host compds, irradiation, enantioselective conversion into β -lactam derivs, 4299

formaldehyde and benzaldehyde, base catalysed reaction with 1-(2-hydroxyphenyl)-3-phenyl-1,3-propanedione, 241

Indazoles

indazol-3-ylidene oxides, stable, prep via intramolecular cyclisation of *N,N'*-disubstituted 2-halobenzo-hydrazides, 697

Indoles

2-vinyl-, reaction with dimethyl 1,2,4,5-tetrazine-3,6-dicarboxylate to form new

- indolyl-1,4-dihydropyridazines and annelated pyridazines, 3927
- 2,3-dihydro-, and 2,3-dihydrobenzofuran derivs via intra- and intermolecular radical reactions with tributyltin hydride, C-C bond formations, 4133
- 3-allyl-, formation via Pd-catalysed reaction of 2-alkynylanilines with allylchlorides, 1799
- (±)-*cis*-trikentrins, synthesis, 391
- Cu-catalysed phenylation by triphenylbismuth bis-trifluoroacetate, 1115
- field, new reductive cyclisation, synthetic and structural studies in conomitine alkaloid series, 4563
- indoline-indole interconversion, 2151
- intramolecular Diels-Alder reactions, 5605
- itomanindoles A and B, methylsulphingylindoles from *Laurencia brongniartii*, 6091
- oxindoles, synthesis by radical cyclisation, 6657
- reactions with $\alpha,8$ -unsaturated carbonyl compds using clay as catalyst, 2577
- ring opening and suppression of neopentyl rearrangement in indoxyltricarboxylchromium and indoline tricarboxyl chromium complexes, 103
- Indolines**
- N-protected-, Mn(III)acetate oxidation, 2151
- Infra red spectra**
- markers of-, cobalt-carbonyl complexes of peptides, 5649
- Inositol**
- 1-0-(1,2-di-O-palmitoyl-sn-glycero-3-phospho)-D-myo-inositol 4,5-diphosphate, analog of (ptd)Ins(4,5)P₂, synthesis, 6513
- 1,2-dipalmitoyl-sn-glycer-3-yl-D-myo-inositol 1-phosphate, synthesis, 6013
- D-4,5-bis(dibenzyl phosphoryl)-myo-inositol deriv for synthesis of inositol phosphates, synthesis of 1,2-cyclic-4,5-, 1,4,5- and 2,4,5-trisphosphates, 5259
- DL-myo-, 1,2-cyclic phosphate, thiophosphate analogs, synthesis, 3919, 3921
- inositol (1,3,4)-trisphosphate, fluorinated analogs and tritiated enantiomers, synthesis, 5217
- myo-, phosphates, synthesis via N,N-diisopropyl dibenzyl phosphoramidite reagent, 979
- myo-inositol-1,4,5-trisphosphate and related derivs, cellular secondary messenger, prep via microbial oxidation of benzene, 5303
- Insecticides**
- biologically active-, tartaric acid, prep, 1079, 1083
- cis*-chrysantheic acid, stereoselective synthesis from 2,2-dimethylidenedone, 6157
- natural-, ant venom alkaloids from *Monomorium* species, 3061
- pellitorine, new synthesis, stereoselective synthesis of conjugated isobutylamides via arsonium salts, 3949
- peptide part of jaspamide, cyclodecapeptide from marine sponge, synthesis, 6465
- Insertion reactions**
- 2-oxazolines from alkenes induced by amidotellurinylation, 1049
- asymmetric nitrogen-, selectivity of process, 151
- bicyclic systems, stereocontrolled syntheses and evidence for allyl Pd/olefin-*cis*-insertion, intramolecular olefin allylations, 4705
- dichlorocarbene into C_{Ar}-S bond, 5877
- dimethoxy carbene, O-H into MeOH(D), primary kinetic isotope effect, 6417
- electrophilic P into cyclopropanes, new synthesis of phosphatanes, 1219
- hydrozirconation-isocyanide insertion-hydrolysis of alkynes and alkenes, conversion into one-carbon homologated aldehydes, 1631
- intermolecular-, reactivity and selectivity of chlorophenyl-carbene, 5863
- intramolecular acetylene-, *in situ* generation of non-stabilised carbene complexes, new two-alkyne annulation and new prep of γ -keto esters, 415
- Pd-catalysed cyclisations of 1-acetoxy-2-methylene-6-heptenes, consistent with allyl-Pd/olefin insertion involving metal transfer to distal alkene terminal, 5529
- Rh-catalysed C-H, in α -diazoketones, regiocontrol by electron withdrawing groups, 2283
- Inversion reactions**
- in enantioselectivity of reductions with NADH models bearing same chiral auxiliary, 931
- ion dipole**
- quaternary ammonium and immonium compds, neutral macrocycle binding affinity due to ion-dipole attraction, 6039
- Ionisation**
- vertical gas phase-, potentials, correlation with N_v values of alpha nucleophiles, 5715
- Ionophores**
- premonensin B, stereoselective synthesis of C(8)-C(20) fragment, 2357
- Iridoids**
- (-)-verbenaol and (-)-epiverbenaol, total synthesis, 611
- and monoterpene indole alkaloid, construction of elegansamine a new class of indole alkaloid, 5395
- lindenialine and lindeniamine, new alkaloids from *Lindenia austro-calendonica*, 615
- tetrameric glucosides, structure and isolation of sambacosides A, E and F from *Jasminium sambac*, 1793
- Iron and compounds**
- (1-azabutadiene)tricarboxyliron complex, formation of pyrrole, 1425
- (*n*-1-substituted-pentadienyl)-(tricarboxyl)iron cations, reactivity with malonate nucleophiles, 1343
- acyls of-, optically active, synthesis, 4273
- and cobalt porphyrin perchlorates, reaction with trimethylsilyldiazomethane, 5677
- and zinc bleomycin, direct comparison of oxygen transfer, 6413
- carbene complex of-, cationic cyclisation, 4921
- dienyliron complexes, alkylation of silyl ketene acetals, application to formation of quaternary C-centers, 869
- electroreduced Fe(CO)₅, use in conversion of organic halides into aldehydes, 6441
- FeCl₃, reaction with 7-chloro-1-silyloxybicyclo[4.1.0]heptanes, prep of 2-(1-chloro-alkylidene)cyclohexanones, 3239
- iron bipyridine and phenanthroline complexes as redox catalysts use in indirect electro *in situ* regeneration of NAD⁺ and NADP⁺ for enzymatic oxidations, 3299
- iron chiral auxiliary use in asymmetric synthesis of (-)-actinonin, 6509
- iron tetraphenylporphyrin with covalently-attached phenolate tail, synthesis and chemistry, 5345
- iron tetraphenylporphyrin with covalently-attached phenolate tail, synthesis and chemistry, 5345
- iron(III)trisphenanthroline complexes, use in pinacol cleavage, 3635
- new hydrophobic macrocyclic redox-active host molecules with four ferrocenyl groups and a novel twelve ferrocenyl group containing analog, synthesis, 2349
- tetracoordinated iron bis-strapped chiral porphyrin bearing a nitrogen base on one handle, 5653
- Isobenzofurens**
- intramolecular Diels-Alder reaction yielding polycyclic system and synthesis of 6-functionalised 11-oxasteroid, p2045
- Isoocyanates**
- aza-Wittig reaction with iminophosphorane, prep of conjugated carbodiimides and their ring closure to 2-aminopyridine derivs, 379
- Cp₂TiCl₂-catalysed reaction with Grignard reagents, formation of reduction-coupling product of isocyanates, 651
- phenyl-, reaction with cyclic ketene acetals through zwitterion to yield spiro compds, 2327
- Isoocyanides**
- and alkenes, conversion into one-carbon homologated aldehydes via hydrozirconation-isocyanide insertion-hydrolysis, 1631
- CO₂ or CS₂, aza-Wittig reaction with iminophosphoranes to give functionalised 4(3H)-quinazolinones and benzimidazo[1,2-c]quinazolines, 3849
- isocyanide dichlorides, N-substituted, Pd-catalysed coupling with alkynyltin compds, new synthesis of dialkynylketones, 5379
- methyl-, transfer reagent, synthesis of 2-

- thionanaphthylmethyl isocyanide, 1435
 reaction of-, synthesis of β -alkoxy imidoyl cyanides from acetals, 6773
- Isindoles**
 cytochalasin, 11-membered ring system, synthesis by modified Reformatsky cyclisation, 2291
 cytochalasin, isindolone, synthesis, allyl selenides from allyl silanes and $\text{PhSeSe}^+(\text{CH}_3)\text{PhF}_6^-$, 2287
- Isomerisation**
 catalysed-, of β -allenic retinals, prep of 11-t-butyl retinoids, 1251
 cyclopropenes, *in vivo*, 6051
 [E]-2-(1-substituted-1-alkenyl)-1,3,2-dioxaborinanes, conversion into isomeric [Z]-compd, stereospecific synthesis of both [E]- and [Z]-1,2-disubstituted vinyl bromides, 21
 photo valence-, of anthraquinone derivs, 2211
 photo-, of trithiazoles, high selectivity, 3963
 regioselective photo-, of pentaenals, effect of Me substituents, 853
 stereoselective-, of α,β -ynones to (E,E)- α,β - γ,δ -dienes, 1045
syn to *anti*-, of [2.2]metacyclophanes, two pathways depending on internal substituents, relative sizes of H and F substituents, synthesis of dihydroxyrene with internal F substituents, 3287
trans-cis photo-, of meta-(phenylazo)azobenzenes, 563
 valence-, of quadricyclane to norbornadiene, dimethyldioxirane catalysed, 15
- Isomerism**
 asymmetric reduction of ketoxime ethers, distinction between *anti* and *syn* isomers leading to enantiomeric amines, 223
 naturally occurring naphtho[2,3-b]pyran-5,10-quinones, synthesis of α -caryopterone, dihydro- α -caryopterone and their isomers 6-hydroxy-dehydro- α -lapachone and 6-hydroxy- α -lapachone, synthesis, 155
- Isotriles**
 synthesis via reductive formylation of oximes, 3343
 synthesis, via photosensitised oxygenation of 2,3-dihydropyrazines, 1127
- Isomers**
cis/trans-, of a triplet of 8 pi non-Kekule polyene, generation and ESR characterisation, 2719
 ergosterol B-, regiocontrolled synthesis, 1581
 of muconaldehyde and 2-methylmuconaldehyde, synthesis, 5991
 regiochemistry of reaction of halosilane with oxide of vinyl 2-furan, styrene and 1-butene, ^{13}C NMR, 3307
- Isoquinolines**
 (1)-4-acetoxy-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-, enantioselective hydrolysis catalysed by immobilised lipase, 567
 4a-acetoxy-6-methoxy-2-methyl-7-oxo-1,2,3,4,4a,7-hexahydro-, fragmentation, 3815
 7,8-dioxygenated-3,4-dihydro-, regioselective synthesis by metalation of β -phenethylamines, 3865
 and benzazepinones, synthesis via acid catalysed cyclisations of aromatic diazoacetamides, 2643
cis-hydro-, highly functionalised, new synthesis, synthetic study of gelsemine, 3781
- Isoquinolinium salts**
 isoquinolinium bromide, cyclisation to chiral oxazolo[2,3a]tetrahydroisoquinoline and its asymmetric alkylation and synthesis of (S)-(-)- and (R)-(+)-salsolidines, 6949
- Isoquinuclidines**
 chiral-, synthesis and absolute configuration, 4423
- Isotopic effects**
 3-azabicyclo[3.2.2]nonanes, conformational equilibrium, 3551
 monodeuterated allylic alcohols, stereochemical assignment, vicinal isotope effects in ^{13}C NMR, 6095
 prim and sec deuterium effects on ^{13}C NMR chemical shifts of trigonal carbons in allylic alcohols, 3945
 primary kinetic isotope effect, dimethoxycarbene O-H insertion into MeOH(D), 6417
- Isotopic labelling**
 2,3,6,6-perdeutero-cyclodextrins, NMR spectroscopic structure detn, 4467
 α -deuterated functional olefins, synthesis using deuterium oxide and potassium carbonate, Wittig-Horner reaction in heterogeneous media, 477
 ^{13}C study, pyrolysis of 8-methyl-1,2-dihydrocyclobutaf[1]naphthalene-1,2-dione and formation of acenaphthalene, 6861
 deuterium labelling and Si-directed epoxide opening, protodesilylation of β - and γ -hydroxysilanes, 6395
E. coli dehydroquinase, affinity labelling, 6783
 inositol(1,3,4)-triphosphate, fluorinated analogs and tritiated enantiomers, synthesis, 5217
 ^{18}O -scrambling, use in study of ion-pair mechanism, 95
 p-methylcinnamic acid, doubly D-labelled, included in modified β -cyclodextrins, dynamic molecular motions of guest molecule, 1413
 photoaffinity labelled optically active retinal derivs, synthesis, 2275
 proteins with technetium-99m, synthesis of bifunctional chelate agent, 3219
 pyrroloquinoline quinone, ^{13}C - and ^2H -labelled, synthesis, 3709
 reduction of 1-phenylethanol by etherated boron trifluoride-triethylsilane system, stereoisotopic study, 5793
 stereospecifically β -deuterated acyclic α -phenylketones, synthesis and use for measurement of racemisation of α -arylketones, 1283
 stereospecifically labelled (3S)- and (3R)-[3- ^2H]abequose, synthesis, 4221
 succinic acid deriv, conformation
- by double ^{13}C -labelling, 757
 tetradeuterated LTA, methyl ester, synthesis, 3069
 tetradeuterated LTA, methyl ester, synthesis, 3069
 thermochemiluminescent label, prep, properties and use of xanthenylideneadamantane 1,2-dioxetane, 3137
 vinylphosphonium salts, new synthesis, application for deuterium labelling, 4577
- Isoxazoles**
 tetrahydro-2H-isoxazolo[2,3-b]-, substituted, entry via tandem 1,3-dipolar cycloadditions of cyclohexane with N-aryl-maleimides, 3331
- Isoxazolidines**
 oxidative ring opening of-, syntheses of β -amino ketones and β -amino acid esters from sec amines, 5949
 transannular formation and cleavage, synthesis of iminoethano-dibenzo[a,e]cyclooctenes, 6985
- Isoxanines**
 5-acetyl-2-, yeast baker's reduction, synthesis of enantiomerically pure 2,3-dihydroxy ketones and 1,2,4-triols, 6167
 Δ^2 -, optically active, prep, 3555
- Kainoids**
 synthesis of pyrrolidine ring, 2195
- Ketals**
 α -hydroxycycloalkanone-, diastereomeric, simple chromatographic resolution, 4035
 α,β -unsaturated, asymmetric inductions in mixed photoadditions, 2613
 quinone mono-, photo-rearrangement, synthesis of substituted cyclopentenones, 163
- Ketenes**
 and vinyl-, intramolecular [2+2] cycloadditions to olefins, synthesis of angular annulated triquinane derivs, 2303
 aryl-, intramolecular cycloadditions with alkenes, reactions of 5-arylbicyclo-[3.2.0]heptan-6-ones, 3175
 diphenyl-, [2+2] and [4+2] cycloadditions with 1,3-diazabutadienes, 921
 hydroxy (and trimethylsiloxy)-phenylethynyl ketenes, generation and cycloadditions, 2765
 intramolecular [2+2] cycloadditions, prep of bridged bicycloalkanes, short synthesis of (+)-clovene, 1493
 keteniminium salt, intramolecular [2+2] cycloaddition, asymmetric induction, approach to chiral 13-oxa-prostanoids, 3369
 methoxymethylene ketene, and thiomoxymethylene-, syntheses and comparative reactivity, 5919
 O- and C-acylation of enolates, 1673
 vinyl-, intramolecular [2+2] cycloadditions to olefins, synthesis of linear annulated triquinane derivs, 459

Ketols

- α -, prep via oxidative ring opening of epoxides, 2163
- Ketones**
- 1,1,1-triaryl-3-diazo-2-propanones, acetolysis, neighbouring group participation, 1,3-shift of an aryl group via 5-membered transition state, 4193
- 1-(2-hydroxyphenyl)-3-phenyl-1,3-propanedione, abnormal base catalysed reaction with formaldehyde and benzaldehyde, 241
- 1,3-dicarbomethoxyacetone, reaction with trinitroanisole, X-ray structural analysis of product, 6757
- 1,4-diketones, and 1,4-keto-aldehydes, new route to with application to synthesis of 2-jasnone and dihydrojasnone, 3587
- 2-alkyl-3-hydroxy-, 1,2-anti diastereoselective reduction via their silyl ethers, 1021
- 2-hexanone, prep of optically pure 2-methyl-1,2-hexanediols using 1,3-trans-oxathiane, 5535
- 2,2-dimethyldione, stereoselective synthesis of *cis*-chrysanthemic acid, 6157
- 2,3-dihydroxy-, enantiomerically pure, and 1,2,4-triols, synthesis via baker's reduction of 5-acetyl-2-isoxazolines, 6167
- α,β -unsaturated-, 4,3-additions to a ruthenium complex, 6737
- α,β -unsaturated-, conjugate additions of Grignard reagents mediated by diamine zinc(II)-monoalkoxides, 3593
- α,β -unsaturated-, Pd-catalysed 1,4-disilylation with 1,1-dichloro-1-phenyl-2,2,2-trimethylsilyl silane, 4147
- α,β -unsaturated-, via reaction of 1,3-dithiane derivs of sterically crowded hydrindanones with ceric ammonium nitrate, 179
- α -hydroxy-, and 1,2-glycols, oxidative cleavage with Jones reagent, 6403
- α -hydroxy-, and α -amino-, via oxidation of enamines using *N*-sulphonyloxaziridines, 4365
- α -hydroxy-, asymmetric synthesis using chiral phase transfer catalysts, 2835
- β - and γ -nitro-, asymmetric reduction by Baker's yeast, 4769
- β -alkoxy-, stereoselective reduction, synthesis of *syn*-1,3-diols, 5419
- β -alkoxy-, stereoselective reduction, synthesis of *syn*-1,3-diols, 5419
- β -hydroxy-, and acylated diols via oxidation of isoxazolines by peracids, 6703
- δ,ϵ -unsaturated-, via allylative ring opening of siloxycyclopropanes by silver fluoride and allylic chlorides, 6137
- acetone, reaction with *p*-substituted phenylchlorocarbene, kinetics and spectroscopy of ylids formed, 3419
- acetylenic-, conjugated, via oxidation of alkynes with *t*-butyl hydroperoxide catalysed by CrO_5 , 2321
- activated-, asymmetric hydrogenation catalysed by new chiral peralkyl-AMPP Rh-complexes, 3675
- acyclic α -phenyl-, stereospecifically β -deuterated, synthesis and use for

- measurement of racemisation of α -arylketones, 1283
- acyloins and cyanohydrins, optically active, bio-organic synthesis, 4485
- aliphatic, aromatic and α,β -unsaturated-, (NMCp) $\cdot\text{TiCl}_4$ -catalysed reduction by Grignard reagent, 4113
- alkyl 4-hydroxy-2-alkynoates and 4-hydroxy-2-alkyn-1-ones, reaction with Pd tributylammonium formate and with tributylamine, prep of 1,4-dicarbonyl compds, 1457
- allylic-, via acylation of allylic mercurials, 6761
- and aldehydes and imines, addition of 2-bromozincmethyl-2-propenyl ethers followed by Pd-catalysed cyclisation, prep of 3-methylenetetrahydrofurans and 3-methylenepyrrolidines, 3579
- and aldehydes via conversion of alcohols by Pfitzner-Moffat oxidation, phenyl dichlorophosphate as activating agent, 3167
- and aldehydes via mild oxidation of 1,1-diorganometallics, new stereoselective approach to aldol products, 6697
- and aldehydes via mild oxidation of amines, 6701
- and aldehydes, fluorine ion induced reaction with phenylthiomethyltrimethylsilane, formation of β -hydroxyphenylsulfides, 3319
- and aldehydes, reaction with dicyclopentadienyltrium chloride, cleavage of $\text{C}_p\text{-Y } \pi$ -bond, 6931
- and aldehydes, reaction with one equiv each of thiols and thioacetic acid, prep of asymmetric dithioacetals, 6729
- and aldehydes, reduction to methylene derivs using ammonium formate as catalytic H-transfer agent, 3741
- and aldehydes, reduction via unsolvated magnesium diisopropylamide to alcohols, 139
- and nitriles and lactams, synthesis via oxidation of amines using iodosobenzene, 6913
- and olefins, electrocatalytic, oxidation based on Ru $\text{O}/\text{Ru} - \text{H}_2\text{O}$ system, 765
- asymmetric borane reduction catalysed by oxazaborolidine, 4453
- asymmetric reduction catalysed by glycerol dehydrogenase from *Geotrichum*, 2453
- bis- α -di-, macrocyclic, via oxidation of 4,5-polymethylene-3,6-hexanooxepins with ruthenium tetroxide, 189
- chiral ethyl-, aldol condensations, control by chiral boron reagents, 585
- conversion to 1,4-diols via $\text{TiCl}_4/\text{Mg}/\text{BrCH}_2\text{CH}_2\text{Br}$ reagent system, 1,2-diorganometallic equivalent, 1583
- cyclic and acyclic chiral-, resolution as their oxime dinitrophenyl carbamates on chiral stationary phase derived from (S)-1-(6,7-dimethyl-1-naphthyl)isobutylamine, 4735
- dialkynyl-, new synthesis, Pd-catalysed coupling of *N*-substituted isocyanide dichlorides with alkynyltin compds, 5379
- dialkynyl-, new synthesis, Pd-catalysed coupling of *N*-substituted isocyanide dichlorides with alkynyltin compds, 5379

- (E)-alkenones, *anti,anti*-1,2,3-triols and *syn*-1,3-diols, prep via synthesis of intermediate 4,6-dialkyl-1,3-dioxins, 1111
- functionalised-, direct formation via coupling of functionalised organo-Cu reagents with acid chlorides, 4513
- methyl vinyl-, carbonyl compds and alkyl iodides, Et $_3$ B-mediated Reformatsky-type coupling, 1041
- methyl-, derivs, mono-functionalised, and enamines, synthesis from thioamides via episulphides and thioiminium salts, carbonyl-modified amino acids and peptides, 2295
- methyl-, and aldehydes, enantioselective aldol reaction mediated by chiral lithium amide bases, 337
- or aldehydes, chemoselective carbonyl alkylation and reduction, 3101
- prochiral-, and imines, stereoselective reduction by chiral 1,4-dihydropyridine (NADH-mimic), 5617
- protected-, and α -hydroxy aldehydes, enantioselective synthesis via hydroxylation of metallated chiral hydrazones, 2437
- Rh-catalysed enantioselective hydroxylation, application of phosphinites from Cinchona alkaloids, 3235
- (S)-2-alkoxy-1-(1,3-dithian-2-yl)-1-propanones, diastereospecific addition of organometallics and its application to synthesis of (-)-trachelanthic acid, 3955
- selective reduction in presence of enones, 517
- stereochemistry of reduction by complex reducing agents, 1379
- unsaturated 1,2-hydroxyimino-, behaviour with trifluoroacetic acid, 6805
- unusual long chain-, of algal origin, 2599
- via oxidation of olefins, multistep catalysis by molecular oxygen in chloride free media, 2885

Ketone halogen derivatives

- α',β -diamino- α,α -difluoro-, new dipeptide isosteres, synthesis, α,α -difluoroketone, HMG CoA reductase inhibitors, 6885
- α -chloro ketones prep and competition by substituent-directed oxidation in oxychlorination of alkenes by chlorochromate reagents, 6707
- α -halo-, reaction with 1-ethoxy-3-trimethylsilyl-1-propyne to give dienic conjugated esters, 3065
- ω -ethylenic trifluoromethyl-, and β -ketoesters, cyclisations to give 5-membered rings bearing CF_3 group, 1011
- bromoketone phenol rearrangement, 5099
- peptidic trifluoromethyl-, and alcohols, synthesis and application as renin inhibitors, 4665

Kinetics

- 2-(3-butenyl)-1,2-dihydropyridines, neutral electron demand Diels-Alder reactions, rate retardation by 4-alkyl substituents, 3187
- alkyl iodides, reduction by LAH supports polar $\text{S}_{\text{N}}2$ mechanism, a quantitative analysis of "mechanistic probe" studies,

- 3451
and spectroscopy of ylids from reaction of *p*-substituted phenylchlorocarbenes with acetone, 3419
changes in stereoselectivity and rate by hydrophobic solvents and by bovine serum albumin in Diels-Alder reactions of 1,4-naphthoquinone derivs with dienes, 3347
conjugate addition of amines to chiral (E) and (Z) vinyl sulphoxides, enantioconvergent and kinetic process, 2089
fulvene cycloadditions in water, influence of rate and selectivity, 3477
perfluoroalkyl ether peroxy radicals, rate constants for self reactions, comparison with rate constants for non fluorinated analogs, 5557
rate constants for reaction of octyl radical with ethyl, butyl and cyclohexyl iodide and with ether and THF, mechanistic probe studies, 3449
rate of an intramolecular Diels-Alder reaction with furan-diene, effect of anchoring substitution, 2493
relative rate study of new anhydrous fluorinating systems, a combination of crown-ethers and cesium fluoride, 4669
- Lactams**
3-hydroxyethyl- β -, and α -amino acid derivs, new approach via azetidino-2,3-diones, 3133
5- and 6-membered-, from prim and sec α -amino acids, formation promoted by Ti(O-*i*-Pr)₄, 3049
 α,β -butyrol-, synthesis from allyl amines, 4859
 β -, antipodal forms via stereospecific reactions, 1649
 β -, derivs via enantioselective conversion,
 β -, formation from β -amino acids via oxazolone-derived reagents, 2203
 β -, N-substituted, synthesis, 2-aza-1,3-dienes as precursors, 3-step synthesis of 4-acetoxy-3-phenoxy-2-azetidino-, 2409
 β -, regioselective hydroxylation by fungus *Beauveria sulforescens*, 6611
 β -, ring, loss from penicillin sulphoxide during rearrangement, 3179
and ketones and nitriles, synthesis via oxidation of amines with iodosobenzene, 6913
and nitriles and ketones, synthesis via oxidation of amines using iodosobenzene, 6913
chiral-, synthesis using group-selective N-insertion for prochiral ketones, intermediate in benzomorphan synthesis, 151
dilactam of L- α,γ -diaminobutyric acid and D-glutamic acid, a 8-turn template, prep of derivs of 3(S)-amino-10(R)-carboxy-1,6-diaza-cyclodeca-2,7-dione, 5057
lactamisation and formylation of 1,3,6H-thiazines by application of oxidative ring opening of 2-pyrazolines, 6249
spirodienone-, isoquinolines and benzazepinones, synthesis via acid catalysed cyclisations of aromatic diazoacetamides, 2643
trans-amino- β -lactam, stereoselective synthesis of from zinc enolates of
- Lactols**
unusual reactions with stabilised phosphorus ylides, specific intramolecular OH group effect leads to high selectivity, 6823
- Lactones**
(\pm)-12-noralliacolide, (\pm)-alliacol A and (\pm)-alliacolide, total synthesis, 5735
 α -acyltetronic acids via cyclisation of acetosuccinates, 4807
 α,β -unsaturated, route based on [3+3] strategy, synthesis of (-)-argentillactone, 2059
 β -peroxy-, formation during photolysis of lactol with (diacetyloxy)benzene and iodine, 5979
 γ -, spiro- and linear-fused, ring systems via radical cyclisations onto 2(5H)-furanone and maleate electrophores, 3869
 γ -, synthesis from alkenes using *p*-methoxybenzyl chloride as $\cdot\text{CH}_2\text{-CO}$, equivalent, 6925
allene macrodiolides, optically active, via macrocyclisation of allenic ester, 6129
(\pm)-and iriolactone a spiro- γ -butyrolactone, via radical cyclisation route, 6487
antileukemic-, synthesis of racemic eriolanin, 3829
avermectin B₁, chemical degradation, 3163
(+)-bakkenolide-A, enantiocontrolled synthesis, 5661
butenolides, 3,5-disubstituted, new method for prep, 3445
butenolides, high pressure induced Diels-Alder cycloadditions to electron-rich dienes, 6989
butenolides, new route from 4-hydroxycyclobutenones via photolysis of 4-substituted-4-hydroxy-3-cyclobuten-1-ones, 3529
butyrol-, fused, stereospecific construction with three contiguous asymmetric centers via dyotropic rearrangement, 1747
calometano-, regioselective route via Rh-catalysed [2+2+2] cycloadditions, 813
cebranolides precursors via stereospecific conversion of homo-chiral α -alkoxy-stannanes, 1657
cebranolides, cytotoxic, absolute configurations, consideration of Mosher's method, 4731
cebranolides, stereoselective synthesis via cyclisation of homo-chiral (α -alkoxyallyl)-stannane precursor, 3899
chiral γ (aminoalkyl)- α -hydroxy- γ -, new diastereoselective synthesis and application to synthesis of renin inhibitors, 3923
chiral synthons for elaboration of mevinic acid analogs, 4865
cis-3,4-disubstituted, synthesis, 3911
cis *Quercus*-, b, diastereoselective synthesis, regio- and stereo-specific ring expansion of optically active cyclopropyl-vinylcarbinols, 1537
(E,E)-4,8-dimethyl-3,8-decadien-10-olide, suspensolide component of male *Anastrepha suspensa*, 6561
functionalised-, and esters, cerium-mediated Grignard reaction, direct access to functionalised allylsilanes, 5009
- guaianolides and pseudo-guaianolides approach via furan terminated cationic cyclisation, 4521
(+)-integerrinac acid-, from R-(+)- β -citronellol, synthesis, 2139
(-)-isocacaniolide, synthesis from D-ribose, 2413
L-gulono-, synthesis of 6-diepicastanospermine and 1,6-diepicastanospermine and synthesis of L-6-diepicastanospermine from D-gulonolactone, 3603
L-gulono-, synthesis of D-deoxymannojirimycin and D-mannonolactone; D-gulonolactone, synthesis of L-deoxymannojirimycin and L-mannonolactone, 2871
macrocylic-, transannular aldol condensations, approach to 8-membered carbocyclic rings, 6897
macrocylic-, via biocatalysis in non-aqueous media, 5583
N-trityl L-homoserine-, assignment of chemical shift values, 4045
petulin, synthesis from arabinose, 2875
polycyclic bilobalide, C₁₁ ginkgolide, enantioselective total synthesis, 3423
portion of compactin and mevinolin, synthesis of chiral synthon, 1255
sesquiterpene-, anisatin-like from *Illicium majus*, 1165
sesquiterpene-, pseudo-guaianolides, confertin and helenalin, synthesis via boron annulation, 521
sesquiterpene-, pseudoguaianolides, enantioselective approach to chiral intermediates, 147
simple tetronic acids, derived vinyllogous urethanes, diastereoselective alkylation, 1489
spirocyclic-, and ethers, stereocontrolled synthesis from N-methyl-4-piperidone and 3-quinuclidinone by phenylthio migration, 5321
Streptomyces-, synthesis, 5703
suspensolide, total synthesis and structure, 6565
synthesis by intramolecular addition of alkoxythiocarbonyl free radicals to acetylenes, 6127
tetronic, thiotetronic and tetramic-, phosphorane mediated synthesis, 2063
(\pm)-threo- γ -hydroxy- β -lysine-, stereoselective synthesis, 3793
tri-acetic acid-, and tetronic acid, Pd-catalysed allylic C-alkylation, 581
tricyclic-, efficient synthesis, intermediate in approach to forskolin, 4039
triterpene-, of Lupane series, prep and CD studies, 5807
tsukubaenolide, synthesis of C(1)-C(15) segment, 4481
vinyl-, synthesis via Pd-catalysed coupling of vinyllic halides or triflates and unsaturated carboxylic acids, 6399
- Lactonisation**
lodo-, of 1,6-heptadien-4-carboxylic acid derivs, 1517
rhodamine B base(2), effect of erythromycin A(E), 1119

Leukotrienes

- 13,13-difluoro-leukotriene B₅, prep, 5665
 19-hydroxy LTB₄, synthesis of assumed metabolite of leukotriene B₅, 2647
 A, methyl ester, synthesis of diaceetylenic analogs, 3073
 A, methyl ester, synthesis via D-glucose, 991
 A, methyl ester, tetradeuterated, synthesis, 3069
 B₅, synthesis of novel antagonists, 143
 B₅, synthesis via enantioselective synthesis of 12(R)-HETE, 3459
 peptide-, conformationally restricted analogs 1,4-thiazanes, 6533

Lignans

- and (+)-burseran, (-)-cubebin, and (-)-hinokinin, total synthesis by diastereoselective conjugate addition of benzyl anions to 2-(R)- and (S)-benzyloxy-2,5-dihydro-4-(3,4-methylenedioxybenzoyl)furan, 3599

Lipids

- 38-(hydroxymethyl)-A-nor-5 α -cholest-15-ene in *Phakellia arvensis*, biosynthesis, 4081
 5-lipoxygenase and Na⁺/K⁺ ATPase, ptilodene,icosanoid inhibitor from *ptilota filicina*, 1505
 8-R-HPETE and proclavulone A from arachidonate in species of Caribbean coral, biosynthesis, widespread route to marine prostanoids, 2555
 12(R)-HETE, enantioselective synthesis applicable to synthesis of leukotriene B₅, 3459
 chiral complex of sorbic acid, resolving agent for an allylic alcohol and key intermediate for chiral syntheses of 4-hydroxy nonenal and corticolic acid, 3937
 D-erythro-1-deoxydihydrocoeramide-1-sulphonic acid, synthesis, 1185
 isomeric 8,9,12-trihydroxyeicoasa-5(Z),10(E),14(Z)-trienic acids, enantiospecific synthesis, 5497
 lanosta-9(11),24-dien-3 β -ol to 14 α -methylcholest-9(11)-en-3 β -ol, conversion in *Holothuria arenicola*, 2159
 lipase-lipid complex as resolution catalyst of racemic alcohols in organic solvents, 5133
 lipophilic nucleotide phosphate analogs, synthesis of lipophilic isostere of ATP, 1615
 lipoxin B, total synthesis, synthesis of chiral (E)-1-trimethylsilyl-1-alken-3,4-diols via Sharpless asymmetric epoxidation of 1,5-bis(trimethylsilyl)-1,4-pentadien-3-ol, 6297
 natural eicosanoid, 2,6-disubstituted pyridine ring in place of carbons 7-9, synthesis of stable LTB₄ antagonist, 143
 phosphosphingoglycolipid from *Turbo cornutus*, synthesis, 1189
 trioxilin B₅, synthesis, 4237

Lipopolysaccharides

- bacterial-, prep of trisaccharide part structures containing KDO and 1-dephospho lipid A, 2227
 bacterial-, prep of trisaccharide part structures containing KDO and 1-dephospho lipid A, 2227
 natural-, of *E. coli* Re mutant,

synthesis of 1-dephospho deriv, 6325

Liquid crystals

- new-, having 4,4'-biphenanthryl core, 1797

Lithiation

- 3-bromo-6-dimethylamino-1-azafulvene dimer, synthesis of 4-mono- and 4,5-disubstituted pyrrole-2-carboxaldehydes, 3215
 6-dimethylamino-1-azafulvene dimer, synthesis of 5-substituted pyrrole-2-carboxaldehydes, 777
 6-methoxy 1,4-benzodioxan, functionalisation at 5-position, 475
 amphiphilic-, synthesis of *trans*-4-n-alkyl-*trans*-2-hydroxymethylcyclohexanols, 5359
 amphiphilic-, synthesis of *trans*-4-n-alkyl-*trans*-2-hydroxymethylcyclohexanols, 5359
 aza-ylide, prep and reaction with alkyl and acyl halides to give amino-phosphonium salts and amines, 3931
 direct-, prep of 1,2,3,4-tertahydroquinolines and 1,2,3,4-tetrahydro-1,6-naphthridines, 5725
 ortho-, of 2-,3- and 4-methoxypyridines, 773
 ortho-, of Li-salts of alkyl phenyl sulphones, a ¹³C/¹H NMR study, 1529

Lithium and compounds

- 2-lithioethylamine equivalent, prep of N-lithio-N-(2-lithioethyl)benzamide, 2859
 2,4-dimethoxy-3-lithiobenzoate of-, regio-specifically generated, prep of N-succinimidyl-2,4-dimethoxy-3-(tri-N-butylstannyl)benzoate, 4385
 3-methyl-5-lithiomethylisoxazoles, cycloaromatization of α -oxoketene dithioacetals, new synthesis of substituted and annelated 1,2-benzisoxazoles, 501
 4-lithio-2-(t-butyl)dimethylsilyl-3-hydroxymethylfuran, regioselective formation approach to 3,4-disubstituted furans, 1247
 10-lithio-ergolinyl-urea, stereoselectivity of electrophilic substitution, effect of reaction conditions, 6429
 α -lithio-2-cyanodiarylmethane intermediates, diastereoselective reaction with benzaldehydes, stereocontrolled synthesis of *cis*-3,4-diarylisochroman-1-ones, 3777
 α -lithio-imidazolines, condensation reactions, prep of conjugate additions of 2-alkenyl-2-imidazolines, 5001
 acyclic α -lithiated sulphide, diastereoselective reactions, thermodynamic control, 2547
 alkyl-Li, induced decarboxylation of stabilised carbanions by non-enolisable carboxylic acids, anion equivalent to Hunsdieker reaction, 4505
 and Grignard reagents, regioselective additions to 2-[(benzylidene)amino]benzonitrile and 2-[(diphenylmethylene)amino]benzonitrile, 4265
 bicyclopentyl-Li, prep from [1.1.1]propellanes and intermediate for prep of 1-substituted bicyclopentanes, 289

bis(trimethylsilyl)dilithio-methane, prep and reactivity, 5237

chiral amide bases of-, mediated enantioselective aldol reaction of methyl ketones and aldehydes, 337

- cinnamyl-Li, dithio-substituted, reaction with carbonyl compds, test of HSAB principle, 5937
 diisopropylamide of-, as hydride donor, reduction of aldehydes, 4057
 dilithium 2,3-butandiolate and trimethoxysilane, use, new entry into S,N-acetals by selective reduction of alkylthiomethyleniminium salts, 5771
 doubly lithiated allyl sulphones, synthesis of exocyclic alkenes, new route to optically active carba-prostacyclins, 781
 enolates of-, regioselective mono-addition to N-carbamoyl-L-pyrroglutamates, 4303
 Li-anion of acetonitrile, reaction with chromium tricarboxyl complexes of 178-(t-butyl)dimethylsilyloxy-3-methoxyestra-1,3,5(10)-triene, 1135
 Li-liquid ammonia reduction, β -elimination of aminoborane, 4713
 lithiated ergolines, electrophilic substitution, 6425
 organo-reagents of-, addition to aldoximes to give hydroxylamines, 3455
 organocuprates, reactions using R₂R₃Cu(CN)LiNa, 893
 tertiary α -lithio ethers, diastereoselective [2.3]Wittig rearrangement, 6901
 tetraalkylcerate of-, use in direct prep of substituted olefins from epoxides, 5165
 vinyl-Li, via coupling of vinyl and aryl triflates with stannyl cuprates, 4795
 Z-dilithiohex-3-ene-1,5-diyne, generation and carbonyl additions, 4681

Macrocycles

- [5.3]furanisoxazolophane, synthesis and transformation into 16-membered macrolides, 2051
 avermectin B₁, chemical degradation, 3163
 bis(benzyl)riccardin C, synthesis, 5039
 bis- α -diketones via oxidation of 4,5-polymethylene-3,6-hexanooxepins with ruthenium tetroxide, 189
 containing tin, small exclusive host for fluoride ion, 4261
 diazacononands, N-methylation, application of ultrasound, 959
 dilactam of L- α , γ -diaminobutyric acid and D-glutamic acid, a β -turn template, prep of derivs of 3(S)-amino-10(R)-carboxy-1,6-diaza-cyclodeca-2,7-dione, 5057
 furan diether, [2.3] Wittig ring contraction, synthesis of possible precursor of pseudopterane lactone diterpene kallolide, 741
 goniodomin A, polyether macrolide from *Goniodoma pseudogoniaulax*, 1149
 lactones via biocatalysis in non-aqueous media, 5583
 lactones, transannular aldol condensations, approach to 8-membered carbocyclic rings, 6897

- macrocycle-based molecular bundle, synthesis, "chundle" approach to molecular channels, 3803
- neutral-, binding affinity for quaternary ammonium and immonium componds due to ion-dipole attraction, 6039
- new hydrophobic redox-active host molecules with four ferrocenyl groups and a novel twelve ferrocenyl group containing analog, synthesis, 2389
- optically active dioxo-cyclam-, bearing two benzyl side chains derived from L-phenylalanine, synthesis and application to olefin oxidation, 5091
- polyammonium receptor, synthetic [15]-N₅, complexation of ATP, 6231
- polycarboxylate-hydrophobic ammonium carriers, active transport of uranyl ion, 1153
- rigid cyclo-bis-intercaland receptor incorporating a phenazine group and metal binding subunits, synthesis, 5255
- trans anti trans tricycle, stereoccontrolled synthesis via a transannular Diels-Alder strategy, 6215
- tricyclic anion receptor molecules, dome-shaped cyclophane type, synthesis, 1709
- trienes, 14-membered, transannular Diels-Alder reaction, experimental results and synthetic potential, 1641
- trienes, isomeric, transannular Diels-Alder reaction, theoretical analysis and stereochemical predictions, 1639
- tsukubaenolide, synthesis of C(1)-C(15) segment, 4481
- unsaturated phosphine tetraoxides via cycloaddition of two dioxo-phosphidure dianions with two mols of unsaturated dihalide, 6247
- Magnesium and compounds**
- allyl MgCl₂, reactivity with nitroarenes, synthesis of N-allyl-N-aryldihydroxylamines and N-allylanilines, 2251
- and Mg-MgBr₂, promoted reductive coupling of α,β-enones, 3679
- excess MgBr₂ required in carbocupration of 1-alkynes by branched alkyl heterocuprates(RCuMgX₂), 4313
- Hunig's base-MgCl₂ mediated C-alkylation and O-acylation of benzoylacetonitrile, 3437
- unsolvated diisopropylamide⁻, reduction of aldehydes and ketones to alcohols, 139
- Manganese and compounds**
- 8-hydroxyadenosine-5'-mono-phosphate, identification as oxidation product of AMP by manganese porphyrin associated with potassium hydrogen persulphate, 6615
- Mn(III)-based oxidative free radical cyclisations of β-ketoesters to give 7- and 8-membered rings, 5209
- Mn(III)acetate oxidation of N-protected indolines, 2151
- organo reagent, use in synthesis of diastereomeric (±)-α-bisabolols and (±)-chlorphenoxamine, 3659
- Mass spectra**
- characterisation of reactive thioaldehydes, formed by vacuum gas-phase dehydrocyanation of thiocyanohydrins, 5899
- FD, FAB and ²²²Rn-PD mass spectrometry of dication salts, 3463
- investigation of adduct formation by methylated cyclodextrins, 2103
- of bis(dimethylamino)arenes, proximity effects; intra-molecular cyclisation of 2,2-bis(dimethylamino)biphenyls under electron impact, 5633
- Mechanisms**
- acetylation of 1,1,1-triaryl-3-diazo-2-propanones, neighbouring group participation, 1,3-shift of an aryl group via 5-membered transition state, 4193
- action of 3 irreversible inhibitors of *E. coli* dehydroquinase, 6783
- alkylation of pentane-2,4-dione, dual mechanistic pathway via its Co(II) complex, 1465
- and stereochemistry of asymmetric allylation of aldehydes with optically active allylsiliconates, 5667
- aspects of conjugate addition of alkyl groups to α-enones in aqueous media under ultrasound, 5373
- aspects of symmetric *cis*-dihydroxylation of olefins with osmium tetroxide using C₂ asymmetric chiral diamine, 573
- aspects of tandem β-fragmentation-intramolecular functionalisation of alkoxy radicals, 5979
- cycloaddition of photochemically generated phenylcyclopropane radical cation to N-methylmorpholinium radical anion, 513
- "dimers" of pyrazolidin-3-one-azomethanimines without centre of symmetry via three step addition-elimination pathway, 2939
- information on stepwise electrophilic additions with 3-membered cyclic intermediates, use of steric vs electronic effects, 6207
- intramolecular photocyclisation of ω,ω-bis(β-vinylphenyl)alkanes, 5375
- ion-pair-, study by ¹⁸O-scrambling, 95
- isolation of meso-oxochlorin and ring opening of zinc meso-oxochlorin to give dihydrobiliverdins by two oxygen molecule mechanism, 5707
- new masked Michael reaction involving a Pummerer intermediate, scope, 2257
- oxidation of enamines to α-hydroxy ketones and α-amino ketones using N-sulphonyloxaziridines, 4365
- p-methoxy-trans-β-deuterostyrene oxide, "spontaneous" reaction in aqueous soln, 293
- probes, use of S-(4-alkenyl)-dithiocarbonates in Barton-McCombie radical deoxygenation, 5805
- (±)-prosurugatoxin, synthesis and ring transformation into surugatoxin, 1547
- rate constants for reaction of octyl radical with ethyl, butyl and cyclohexyl iodide and with ether and THF, mechanistic probe studies, 3449
- reaction of imines with sodium hydrogen telluride, mechanism, 2571
- reaction of phosphonium ylides with alkyl propynoates, 381
- reactions of Grignard reagents with allylic and vinylic sulphoxides, retention of geometric configuration of allylic and vinylic groups; ligand coupling through α-sulphurane, 4445
- reduction of alkyl iodides by LAH supports polar SN2 mechanism, a quantitative analysis of "mechanistic probe" studies, 3451
- three divergent mechanisms, displacement of O-vs N-substituents in nitrosamine derived diazenium ions, 2903
- Membranes**
- bulk liquid-, Cu-mediated selective transport across of α-amino acids using chiral lipophilic ligand as carrier, 4967
- macrocycle-based molecular bundle, synthesis, "chundle" approach to molecular channels, 3803
- macrocylic polycarboxylate-hydrophobic ammonium carriers, active transport of uranyl ion, 1153
- Mercury and compounds**
- allylic mercurials, acylation, prep of allylic ketones, 6761
- induced cyclisation of dipropargyl ethers, regioselective synthesis of 2-(1-aminoethyl)furans, 5029
- mediated synthesis of bis(carboxy)iodobenzenes, 2033
- organo componds of-, Pd-catalysed coupling with vinylic oxetanes, synthesis of homoallylic alcohols, 5069
- organo intermediates of-, in biomimetic cyclisation of communic acids to pimarane skeleton, 3713
- Mesoionic compounds**
- carbonyl ylides, intramolecular [3+2] cycloadditions, 1677
- Metabolites**
- 19-hydroxy LTB₄, synthesis of assumed metabolite of leukotriene B₄, 2647
- alkaloid-, of *Eudistoma* sp., segoline A, isosegoline A and nor-segoline, 3861
- brevianamides A and B, synthetic approach, prep of 4-p-methoxybenzyl-5-(1'-carbo-methoxy-2'-[1",1"-dimethylallyl]-2',3'-dihydroindole]-methylidene)-1,2-L-pyrrolidino-piperazine-3,6-dione via Ireland ester enolate Claisen rearrangement, 2539
- cephalosporin-derived fungal-, structure of AC107, 2101
- (±)-*cis*-trikentrin, synthesis, 391
- (±)-citroviral from *Penicillium citroviride*, total synthesis, 711
- hexachloro-, dysidamide from *Dysidea* sp, 3863
- (-)-isococeniolide, synthesis from D-ribose, 2413
- isomeric 8,9,12-trihydroxyicosaa-5(Z),10(E),14(Z)-trienic acids, enantiospecific synthesis, 5497
- new immunomodulator, structure and isolation of FR 900483 from a fungus, 1725
- phytoxin bipolaroxin of fungal origin, synthesis of monocyclic analog, 1347

- (-)-preclavulone-A, enantioselective total synthesis, 995
pulo'upone, total synthesis, 2757
thiazole and imidazole-, from Alpidium pliciferum, 1099
- Metalation**
α-, of 1-(t-butoxycarbonyl)1,2-dihydropyridines, 1751
β-phenethylamines, regioselective synthesis of 7,8-dioxogenated-3,4-dihydroisoquinolines, 3865
cyclic acyl-, Pd-catalysed, of allylic electrophiles, route to cyclopentanone derivs, 6745
directed ortho-, connection to aryl-aryl cross coupling, regioselective synthesis of phenanthrols, 3789
directed-, connection to aryl-aryl cross coupling, regioselective synthesis of phenanthridines, phenanthridinones and biphenyl alkaloid isamine, 5463
intramolecular amidomercuration, selective amination of allylic alcohols, 3789
ortho-selective-, and electrophilic substitution of benzylamine derivs, 4277
(poly)functionalisation and conversion of imidazoles to imidazolones, 3411
regioselective mercuration, fluorination of substituted veratroles, 1501
stereoselective oxymercuration of γ-siloxyallene and a stereospecific Mg-MeOH reduction, synthesis of C₁₁-C₁₁, portion of paramycin-607, 5505
- Metals see also specific metals**
1,1-diorganometallics, mild oxidation to aldehydes and ketones, new stereoselective approach to aldol products, 6697
α-metallo selenones, exploratory study, original synthesis of oxaspiropentanes, 3265
alkali-metal induced C-C bond cleavage, C-H bond cleavage and cyclopolymerisation in 1,5-hexadienes, 3929
Cu and Ni catalysed S_N2'- and S_N2-regioselective allylation of organo-Zn reagents, 5155
metal carbonyls, presence in photocarbonylation of alkyl iodides, 3833
metal complex catalysed olefin oxidation, via application of synthesis of optically active dioxo-cyclam macrocycle derived from L-phenylalanine, 5091
metal nitrates supported on silica gel, oxidation of alcohols, 6265
metal oxides, promoted cycloversion of acylquadracyclane to acylnorbornadiene, 4109
metal(VI)oxide dperoxides, oxidation of enol ethers, 3145
metal perfluoro-1-propen-2-olates, generation and reactivities, 4119
metallic surface, thin organic covering, detn of thickness using ellipsometry, 5437
new bis(1,3-dithiole) derivs, prep of extended π-donors for organic metals, 1075
organo compds of-, diastereospecific addition to (S)-2-alkoxy-1-(1,3-dithian-2-yl)-1-propanones and its application to synthesis of (-)-trachelanthic acid, 3955
organo metal derivs of peptides, application to peptide receptor analysis, 5759
organo reagents, introduction of 2-oxophosphonate 1-fluorinated synthons via dialkylphosphonofluoroacetyl chlorides, Horner reaction of derived anions with aldehydes gave 2-fluoro-2-enones, application to cis, trans caronaldehyde ethyl esters gave 2-fluoroethyl pyrethroid derivs, 2655
Pb/Al bimetal redox system, Barbier-type allylation of acetals with allyl bromide, 1721
Pb/Al bimetal redox system, reductive dimerisation of imines, 3811
rigid cyclic-bis-intercaland macrocyclic receptor incorporating a phenazine group and metal binding subunits, synthesis, 5255
TiCl₄/Mg/BrCH₂CH₂Br reagent system, 1,2-diorganometallic equivalent, 1583
Ti/Cu and Ti/Ag catalysts in isomerisation of α-acetylenic alcohols to α,β-ethylenic carbonyl derivs, 6253
- Microorganism reactions**
baker's yeast reduction of 5-acetyl-2-isoxazolines, synthesis of enantiomerically pure 2,3-dihydroxy ketones and 1,2,4-triols, 6167
Baker's yeast, asymmetric reduction of β- and γ-nitro ketones, 4769
¹³C NMR studies on pyrromethane cofactor of hydroxymethylbilane synthase, 2591
dehydrogenation of dithia-analog of stearic acid, 285
fungal biotransformation, removal of O- and N-benzyl groups, 6393
microbial enzyme, kinetic resolution of methyl ketone cyanhydrin acetates, 6957
oxidation of benzene, prep of cellular secondary messenger myo-inositol-1,4,5-trisphosphate and related derivs, 5303
regioselective hydroxylation of β-lactams by Beauveria sulfurescens, 6611
selective conversion of 1,3-dicyanobenzene into 3-cyanobenzoic acid, 2589
- Migration**
[1,3]-O-to C-, thermal, exocyclic vinyl ethers, (derived from quinols) conversion to spirodienones, 3441
and stability of silyl group in use of phenylthiomethyl-trimethylsilane as formyl synthon, 835
Me group-, in alkynyl-trialkylborate reactions, 4181
phenylthio-, cyclisation of diols, stereochemical control in synthesis of tetrahydrofurans, 4885
phenylthio-, of N-methyl-4-piperidone and 3-quinuclidinone, stereocontrolled synthesis of spirocyclic lactones and ethers, 5321
photo and thermal rearrangement of diazo-2-trimethylsilyl-2-sila-3,5-cyclohexadienes with silabenzene and silafulvene as intermediates, 467
rearrangement of styrene oxide, diastereotopic selection of C₂ hydrogens in rearrangement of C1-substituted epoxides, 2575
- triarylmethyl peroxides and α- and β-naphthylidiphenylmethyl peroxide, photo-reactions, 3029
- Mobius ladders**
topicity of vertices and edges, chemical implications, 731
- Models**
1-(quinoxalin-2-yl)-alkane-1,2-dithiols and -alkene-1,2-dithiols, model compds for pterin which ligands Mo in oxomolybdenum enzymes cofactor, 1453
2,4,6,8-tetraazabarbaralanes-, for tetraazasemibullvalenes, 3639
calicheamicin deoxyglycoone-, synthesis by intramolecular acetylde cyclisation, 4217
chiral dienes, conformational model for asymmetric Diels-Alder reactions, 5225
cyclopeptide model studies, 6067
dehydrogenase, NAD(P)⁺-NAD(P)H-, for chemical evolution, stereospecific conversion of central chirality into axial chirality, 3079
for studying folding of β-pleated sheets in peptide-functionalised diacylaminoepidolidinones, 5079
host enzyme-, synthesis and esterolytic behaviour
intraoavity acetyl transfer in water soluble cyclophane, 6047
molecular study, Barton reaction and related processes, 2761
of ternary complex in thymidylate synthase reaction which is at same oxidation state as the natural complex, formation of exocyclic methylene intermediate from this model, 5445
of ternary complex in thymidylate synthase reaction which is at same oxidation state as the natural complex, formation of exocyclic methylene intermediate from this model, 5445
prostaglandin endoperoxide-, electrophile-initiated conversion into thromboxane B skeleton, 4595
simple-, for co-operativity arising from torsional freedom, 5021
- M.O. calculations see Theoretical calculations**
- Molecular recognition**
in organic media, ion-dipole effect as a force, 6039
- Molybdenum**
1-(quinoxalin-2-yl)-alkane-1,2-dithiols and -alkene-1,2-dithiols, model compds for pterin which ligands Mo in oxomolybdenum enzymes cofactor, 1453
- Named reactions**
11-membered cytochalasin ring system, synthesis by modified Reformatsky cyclisation, 2291
1,1-bis(trimethylsilyl)ethylene, dimerisation to 1,1,4,4-tetrakis(trimethylsilyl)butane-1,4-diyl dianion a reagent for Peterson reaction, 6939
1,3,4-oxadiazoles as heterocyclic 4π-components in Diels-Alder reactions, 3231
1-benzylidimethylsilyl-4-phenylthio-1,3-butadiene, synthesis, new diene-regenerable

- Diels-Alder synthon, 6719
- 1-cylobutenyl ketones, Diels-Alder and ring enlargement reactions, prep of 1-acetyl-1,3,5-cyclooctatrienes, 6283
- 1-methyl-1-aza-4-cyclanones, Hofmann-like fragmentation induced by N-acylation, use in synthesis of 2-aza-decalones and 2-aza-hydrindanones, 3303
- 2,3-dideoxy-2,2-difluoro-3-amino sugars and 3,3-difluoro-2-azetidionones, synthesis via Reformatsky reaction of difluoroacetate with imine, 5291
- 2-(2,3-diphenylcyclopropen-1-yl)- β -tropolone, intramolecular Diels-Alder reaction with inverse electron demand, construction of semibullvalene-type carbon skeleton, 4123
- 2-(3-butenyl)-1,2-dihydropyridines, neutral electron demand Diels-Alder reactions, rate retardation by 4-alkyl substituents, 3187
- 2-azabicyclo[2.2.2]octan-2-ones and 2,3,4-substituted cyclohexanones, diastereoselective synthesis, Diels-Alder reactions of 2-azadienes, 4573
- 4-hetero-4-anilino-piperidines, synthesis, a variant of Brylants reaction, 6827
- 5,10,12-(5E,10E,12E)-octadecatrienoic and 2,7,9-(2E,7E,9E)-pentadecatrienoic esters, intramolecular Diels-Alder reactions, 2685
- 6-hydroxycembrane precursors, synthesis via controlled diastereoselective [2,3]Wittig ring contraction, 3547
- 6-((dimethylamino)methylene)amino-1,3-dimethyluracil, [4+2] cycloaddition with electron deficient olefins to give pyrido[2,3-d]pyrimidines; with DMAD or azodicarboxylates Michael addition occurs leading to pyrrolo[3,4-c]pyridines and theophylline derivs, 4401
- α -amino acids, oxidations under Mitsunobu reaction conditions, 4651
- α -deuterated functional olefins, synthesis using deuterium oxide and potassium carbonate, Wittig-Horner reaction in heterogeneous media, 477
- α -hydroxy ketones and 1,2-glycols, oxidative cleavage with Jones reagent, 6403
- β -chloro acids and esters, synthesis via new Mukaiyama reaction, 1275
- acetals, Barbier-type allylation with allyl bromide in Pb/Al bimetal redox system, 1721
- acetylenedicarboxaldehyde monoacetal, reaction with electrophilic alkenes and alkynes to give Diels-Alder and pseudo-Michael addition substitutions, 1025
- allylic substitution and Michael addition, competition between in reaction with carbanions α to nitriles, 1713
- [(allyloxy)methyl]sulphones, synthesis and reactions; equivalent for [2,3]-Wittig rearrangement of nonconjugated sec carbanions, 5233
- aminopeptidase B from Ehrlich ascites carcinoma cells, total synthesis of natural inhibitor OF4949-III, 3227
- amphotericin B, C₁, -C₂, building blocks, stereocontrolled synthesis using [2,3]Wittig rearrangement, 5747
- anionic oxy-Claisen rearrangement of tricyclic α -allyloxy ketone, 4229
- anomalous Vilsmeier reaction, 3391
- aromatic yohimboid and protoberberine alkaloids via intramolecular Diels-Alder reactions, 6725
- asymmetric induction in [2,3]Wittig rearrangement of allylic ethers with chiral substituent, new entries to stereocontrol over three contiguous chiral centers, 4587
- asymmetric Michael addition involving chiral imines, stereochemical data in support of cyclic-like transition state, 2667
- asymmetric synthesis of α -alkylated α -amino acids via Schmidt rearrangement of α,α -bisalkylated β -keto esters, 403
- asymmetric synthesis via heteroconjugative addition using Eliel's camphor template, 4773
- aza-Wittig reaction of iminophosphoranes with isocyanides, CO₂ or CS₂ to give functionalised 4(3H)-quinazolinones and benzimidazo[1,2-c]quinazolines, 3849
- Barbier-type reaction with trialkylstilbene, 1395
- Barton reaction and related processes, molecular modelling study, 2761
- Barton-McCombie radical deoxygenation, use of S-(4-alkenyl)-dithiocarbonates as mechanistic probes, 5805
- benzoylacetonitrile, Hunig's base-MgCl₂ mediated C-alkylation and O-acylation, 3437
- bicyclic diazenes, Arrhenius activation parameters, use in 1,3-diyl trapping reactions and intermediate formed in deazetation, 5711
- bis-acetylenic alcohols, oxy-Cope rearrangement to mixtures of E and Z-enynes, enolisation and electrocyclic ring closure to methylenecyclopentenones, 6865
- branched nitrosugars by Henry reaction of 3-nitrobutanal with aldehydes, synthesis of unnatural D-evernitrose analogs, 6083
- brevianamides A and B, synthetic approach, prep of 4-p-methoxybenzyl-5-(1'-carboxymethoxy-2'-[1",1"-dimethylallyl-2',3'-dihydroindole]-methylidene)-1,2-L-pyrrolidino-piperazine-3,6-dione via Ireland ester enolate Claisen rearrangement, 2539
- butadiene and ethylene, transition state of Diels-Alder reaction, perturbational evaluation, 4699
- C-glycosylation of substituted heterocycles under Friedel-Crafts conditions, two-step synthesis of thieno[3,4-d]pyrimidine C-nucleoside analog of inosine, 3537
- carbopenems, novel Diels-Alder reaction, 6341
- cathodic promotion of Horner reaction, 3007
- ceruberonic acid III, construction of tetracyclic nucleus by oxyanionic Cope chemistry, 273
- chloropdifluoroacetic acid derivs, Reformatskii-Claisen reaction, synthesis of F-containing organo-Zn reagents, 3291
- cis-decalin, synthesis via Diels-Alder and double Michael addition with substituted Nazarov reagent, 5117
- Claisen rearrangement of allylic α -isocyanate esters, regioselective allylation of α -isocyanate esters at a carbon, 5151
- Claisen rearrangement, synthesis of flav-3-enes, 6797
- cycloaddition of Oppolzer's chiral sulfoxide with nitrile oxides, model for asymmetric induction in non Lewis acid catalysed reactions of Oppolzer's chiral sulfoxide, 3555
- cytotoxic cembranolides, absolute configurations, consideration of Mosher's method, 4731
- dialkylphosphonofluoroacetyl chlorides introduction of 2-oxophosphonate 1-fluorinated synthons on organometallic reagents, Horner reaction of derived anions with aldehydes gave 2-fluoro-2-enones, application to cis, trans α,β -unsaturated aldehyde ethyl esters gave 2-fluoroethyl pyrethroid derivs, 2655
- diastereo-differentiating Simmons-Smith reaction using 2,4-pentandiol as chiral auxiliary, 5775
- diastereoselective [2,3]Wittig rearrangement of tertiary α -lithio ethers, 6901
- diazacyclopentane A and B, synthesis, first double Knorr cyclisation, 3545
- Diels-Alder cycloadditions, promoted by Lewis acid and high press of N-alkyl-N-sulphinyl dienophiles, 4233
- dihydropyridine, enantioselective Hantzsch synthesis via metallated chiral alkyl acetoacetate hydrazones, 6437
- donor-acceptor substituted-, synthesis via Fisher effect of anchoring substitution on rate of an intramolecular Diels-Alder reaction with furan-diene, 2493
- enantioselective synthesis and absolute configuration of (-)-pulegone by asymmetric intramolecular Diels-Alder reaction, 5885
- enol ethers and ketene acetals, triplex-catalysed Diels-Alder and [2+2] cycloaddition reactions, 5125
- erythromycin A, convergent synthesis of Woodward's carbamate intermediate, 2223
- esters activated by electro-attracting group e.g. ethyl trifluoroacetate or ethyl oxalate, reaction with CF₃Br-Zn-pyridine, Barbier reaction, 1029
- Et₂B-mediated Reformatsky-type coupling of alkyl iodides, methyl vinyl ketone and carbonyl compds, 1041
- Fischer carbene complex and 1,3-dienes, fluorine containing organo-Zn reagents, Reformatskii-type reactions of chlorodifluoroacetic acid derivs, 2943
- furan and 2-methylfuran, Mannich reactions using pre-formed imonium salts, 2377
- fused carbocyclic systems, stereospecific synthesis via Ireland reaction, 1371
- fused cyclooctanes via intramolecular addition of unsymmetrical allylsilane to

- conjugated dienone, tandem Michael addition/enolate-accelerated Cope rearrangement mechanism, 2773
- galactosyl amine as chiral matrix, reversal of asymmetric induction in stereoselective Strecker synthesis, 4397
- glycols, reaction with pyridinium poly(hydrogenfluoride) giving Ferrier rearranged sugar fluorides, 1363
- Hantsch cyclisation of ethyl 4-chloro-2-benzylidene-acetoacetates with methyl 3-aminoacetate to 2-chloromethylenel, 2,3,4-tetrahydropyridine-3,5-dicarboxylic ester, configuration at C₂-c., 6335
- high pressure induced Diels-Alder cycloadditions of butenolides to electron-rich dienes, 6989
- indoles, intramolecular Diels-Alder reactions, 5605
- intramolecular Diels-Alder cyclisations of 1-alkenyl-2-aza-1,3-diene, 4799
- Intramolecular Diels-Alder reaction of furans with doubly activated dienophiles, stereochemistry, 5825
- intramolecular Diels-Alder reactions, effects of substituents on rate enhancements, reasons for gem-dimethyl effect, 2429
- isopropyl [(ZE)-1-(benzyl-oxalkyl)-2-butenyl]oxyacetate, stereoselectivity in [2,3]Wittig rearrangement, prep of potent building blocks for synthesis of polyoxo compds, 4763
- Knoevenagel condensation under heterogeneous catalysis, silica gel functionalised with amino groups as a new catalyst, 2261
- L-phenylalanine, oxidation by modified Udenfriend system, 2177
- lipoxin B, total synthesis, synthesis of chiral (E)-1-trimethylsilyl-1-alken-3,4-diols via Sharpless asymmetric epoxidation of 1,5-bis(trimethylsilyl)-1,4-pentadien-3-ol, 6297
- Meinwald rearrangement of electron deficient systems, investigation, 6313
- methyl 3-(2-acyloxy-4-methoxyphenyl)propanoates, regioselective Fries rearrangement, total synthesis of linear acylated coumarins geijerin and dehydrogeijerin, 1311
- Michael reaction, cyanide promoted, use of aminonitrile as enamine equivalent, 6831
- molecular aggregation and its applicability to synthesis, Diels-Alder reaction, 3745
- N-methylpyrrole, Mannich reactions using aminals and aminol ethers activated with acetyl chloride or sulphur dioxide, 2997
- new masked Michael reaction involving a Pummerer intermediate, scope, 2257
- nucleophilic substitution of α -allylic alcohols via Murahashi method, synthesis of 1,3-dienes, 1701
- nucleophilic substitution of α -carbonyl derivs, multiple Hammett study, 4431
- optically active 3-oxa-carbacyclin precursors featuring asymmetric Horner-Emmons reaction, 1773
- oxacyclic carboxylic esters, synthesis via methoxycarbonyl-oxonium ions, evidence for cationic oxa-Cope rearrangement, 6365
- oxidation of α -hydroxy esters to α -keto esters using Deras-Martin periodinane reagent, 3433
- oximes, regio- and stereo-specific class 2 tandem Michael addition-cycloaddition reactions, 4323
- Paterno-Buchi cycloaddition of aldehydes to silyl and stannyl substituted furans, 6689
- Pauson cycloaddition, steric control, dicobalthexacarbonyl complexes if internal alkynes, reaction with olefins to give cyclopentenones, 999
- Pd-catalysed Cadiot-Chodkiewicz coupling of acetylene and diacetylene with 1-halogenalkenes to give 1,2,6,7-octatetraene-4-ine, 1,2,8,9-decatetraene-4,6-diene and 2,4,6-octatriene, 3651
- perfluoroalkylated alcohols, Koenigs-Knorr reaction, abnormal issue, 2193
- periplanone-B, approach via intramolecular Diels-Alder reaction with furan-diene and allene-dienophile, 6501
- phenols, effect of sulphur dioxide on Mannich reactions, 5801
- phenyl dichlorophosphate as activating agent in Fritzner-Hoffat oxidation, 3167
- phosphaalkynes, homo-Diels-Alder and ene reactions, 1681
- photo-Diels-Alder addition of N-methyltriazolidinedione to phenanthrene, 5509
- polyquinenes, approach to synthesis via Weiss reaction, progress towards synthesis of dicyclopentapentalenes, 171
- porphyrins with 6-membered exocyclic rings, synthesis by Macdonald condensation and the a,b-biladiene route, 6877
- potentially valuable carbenem intermediates, prep via extension of Barret's procedure, 3129
- prostaglandin precursor, synthesis by mixed Kolbe electrolysis of 3-(cyclopent-2-enyloxy)propionate, 2801
- pseudopterane lactone diterpene kallolide, synthesis of possible precursor via [2,3] Wittig ring contraction of macrocyclic furan diether, 741
- pyrano[3,4-b]indol-3-ones, intramolecular Diels-Alder reactions, 2693
- pyrrolidines by intramolecular addition of Kolbe radicals generated from β -allylamino-alkanoates, 2797
- Reformatsky reagent, of difluoroacetate, generation and aldol reaction, 1803
- regioselective Diels-Alder cycloaddition between 3-fluorobenzene and 2-alkylfurans, 6227
- regioselective synthesis of 4,5- and 4,8- disubstituted aza-anthraquinones by Diels-Alder route, 5913
- regiospecific synthesis of isoquinoline alkaloids, use of arylsilanes in directed Pictet-Spengler cyclisations, 6715
- Sakurai reaction, stereoselective synthesis of 7 α -allyl- and 7 α -propylsteroids, 1533
- selenoaldehydes, intramolecular Diels-Alder reaction, 6965
- sequential Friedlander condensations between pentacyclic bis(ketoester) and α -aminobenzaldehyde, 6681
- siloxy[2,3]Wittig rearrangement, new diastereoselective prep of 1,2-diol systems, 5409
- spontaneous rearrangement of Corey's reaction, 851
- stabilised carbanions by alkylolithium-induced decarboxylation on non-enisable carboxylic acids, anion equivalent to Hunsdieker reaction, 4505
- stereoccontrolled synthesis of a trans anti trans tricyclo via a transannular Diels-Alder strategy, 6215
- stereoselectivity in intramolecular Diels-Alder reaction of D-xylose triene deriv, 481
- steroid C/D ring synthon, new entry via sequential Claisen-ene approach to carbocyclisation, 5277
- steroid synthesis, enantioselective prep of key[ABC] intermediates via asymmetric Michael addition involving chiral imines, 4427
- substituted bicyclo[3.3.0]octane-3-ones, E- or Z-selective Horner-Wittig reaction with chiral phosphonoacetates, 1775
- Swern oxidation of diverse alcohols using oxalyl chloride-DMSO yielded products resulting from electrophilic chlorination, 49
- tandem cyclopropanation/Cope rearrangement sequence, intramolecular approach to 7-membered rings, 975
- tertiary allylic ethers, [2,3] Wittig rearrangement, application to synthesis of C₁-C₂ subunit of zincophorin, 6905
- theoretical analysis and stereochemical predictions on transannular Diels-Alder reaction of isomeric macrocyclic trienes, 1639
- transannular Diels-Alder reaction of 14-membered macrocyclic trienes, experimental results and synthetic potential, 1641
- (-)-tylophorine, asymmetric synthesis via enantioselective intramolecular double bond Michael reaction, 4135
- unprotected aldohexoses, Wittig reactions, formation of optically active tetrahydrofurans and tetrahydropyrans, 693
- unsaturated acylcyclopentadienes and cyclopentadiene carboxylates, intramolecular Diels-Alder reactions, 135
- Wittig reactions with maleic anhydrides, neighbouring group effects on regioselectivity, 6203
- ylide anions from semi-stabilised phosphonium ylides, stereochemistry of Wittig reactions, 485
- Z-allyltrimethylsilanes, stereoselective synthesis use of modified Seyferth-Wittig reagent, [2-(trimethylsilyl)-ethylidene]tris(2-methylphenyl)phosphorane, 5965
- (Z,Z)-22,3-bis(trimethylsilyl)-1,4-dibromo- and 2,3-bis(trimethylsilyl)-1,1,4,4-tetrabromobuta-1,3-dienes, synthesis and Diels-Alder reactions, 1833

Naphthalenes see bicyclic aromatic compounds

phosphorothioate of-, synthesis, prep of deoxynucleoside thio-phosphoramidite intermediate, 6843

Natural products

3-methylguanosine via chemical degradation of yosine, 4163
 5-lipoxygenase and Na⁺/K⁺ ATPase, ptilodene,icosanoid inhibitor from *Ptilota filicina*, 1505
 11-nortetrodotoxin-6(R)-ol and other tetrodotoxin derivs isolation from *Fugu niphobles*, 4127
 14-epi-*crinipellin* skeleton, construction of functionalised C₁₄-tetraquinane carbon framework via cationic enone-olefin cyclisation, 5025
 α-homonojirimycin, glucosidase inhibitor, isolation from *Omphalea diandra*, 6483
 β-2,7,11-cembratriene-4,6-diol, tumour inhibitory constituent of tobacco smoke, stereoselective synthesis, 4913
 β-lactams, regioselective hydroxylation by fungus *Beauveria sulfurescens*, 6611
 β-necrodol, synthesis via Pd-catalysed reductive enyne cyclisation, 1231
 alexine, (1R,2R,3R,7S,8S)-3-trihydroxymethyl-1,2,7-trihydroxypyrrolizidine[(2R,3R,4R,5S,6S)-2-hydroxymethyl-1-azabicyclo[3.3.0]octan-3,4,6-triol], isolation from *Alexa leiopetala*, 2487
 alkaloid metabolites of *Eudistoma* sp, segoline A, isosegoline A and nor-segoline, 3861
 alienic alcohols, reduction via *Saccharomyces cerevisiae*, 3797
 alpha-, N. values correlation with vertical gas phase ionisation potentials, 5715
 ambergris fragrance chemicals from scleroel, synthesis involving Pd-catalysed key steps, 1017
 amyloglucosidase inhibitor, synthesis of 6-epioastanospermine and 1,6-diepi-castanospermine and synthesis of L-6-epioastanospermine and L-1,6-diepi-castanospermine from D-venonolactone, 3603
 ant venom alkaloids from *Monomorium* species, natural insecticides, 3061
 antibacterial pigment from *Dendrilla membranosa* confirmed as 4,5,8-trihydroxyquinoline-2-carboxylic acid, 2137
 antimicrobial alkaloid halicionadamine, structure and isolation from *Haliciona* sp, 3427
 aphanorphine, tricyclic alkaloid from *Aphanizomenon flos-aquae*, 4381
 arabinose, synthesis of patulin, 2875
 arabinose, synthesis of patulin, 2875
Argiope aurantia, total synthesis of argiotoxins 636,659 and 673, 6223
 asymmetric synthesis via acetal templates, prep of enantiomerically pure mevinolin analogs, 3757
 azadirachtin, conversion to azadirachtinin skeletons, chemistry of insect antifeedants from *Azadirachta indica*, 1849
 (+)-bakkenolide-A, enantio-controlled synthesis, 5661

benzoshikonin and benzo-cycloshikonin, synthesis, 85
 benzo[*a*]phenanthridines, formation by oxidative C-N bond fission of protoberberines followed by intramolecular recyclisation in cell cultures of *Corydalis incisa*, 6457
 benzyl ethers, fungal removal of O- and N-benzyl groups, 6393
 biosynthesis of 3β-(hydroxymethyl)-A-nor-5α-cholest-15-ene in *Phakellia aruensis*, 4081
 biosynthesis of 8-R-HPETE and preclavulone A from arachidonate in species of Caribbean coral widespread route to marine prostanoids, 2555
 biosynthesis of mugineic acid and 2'-deoxymugineic acid in *Hordeum vulgare*, phytosiderophore study, 1053
 biosynthesis of obafuorin from p-aminophenylalanine in *seudomonas fluorescens*, 6353
 bisnorditerpene, cytotoxic salvicolone with benzotropolone chromophore from *Salvia miltiorrhiza*, 4603
 botryals, even C₂₂-C₂₄, α-branched, α-unsaturated aldehydes and their epoxy derivs, isolation from *Botryococcus braunii*, 2831
 bridged bicycloalkanes, prep via intramolecular [2+2] cycloadditions of ketenes, short synthesis of (+)-clovene, 1493
 C-19 diterpenoid alkaloid from *Delphinium barbeyi*, structure of barbelline, 2397
 capsular polysaccharide of *Haemophilus influenzae* type b, new approach to synthesis of dimeric fragment, 4049
 capsular polysaccharide of *Haemophilus influenzae*, synthesis of fragments, 1525
 cephalosporin-derived fungal metabolite, structure of AC107, 2101
 ceruberonic acid III, construction of tetracyclic nucleus by oxyanionic Cope chemistry, 273
 chiral synthons for elaboration of mevinic acid analogs, 4865
 (+)-citreo-viral from *Penicillium citreo-viride*, total synthesis, 711
 cyclic peptide toxin cyanogenosin-RR from *Microcystis aeruginosa*, structure, 11
 cyclic peptides, fenestins A and B and known diketopiperazine cyclo-(L-Pro-L-Val), isolation from *Leucophilous fenestrata*, 5489
 cyclopropene sterols in *Calyx nicotianaensis*, experimental biosynthetic interconversion, 6051
 D-erythro-1-deoxydihydroceramide-1-sulphonic acid, synthesis, 1185
 deacetyl glykenins A, B and C from *Basidiomycetes* sp, structures, 5287
 didemins, β-keto ester units, synthesis using 2,2'-carbonyl-bis(3,5-dioxo-4-methyl-1,2,4-oxadiazolidine), 2661
 dimeric opium alkaloid, structure and absolute stereochemistry of somniferine and its O-methyl ether, 3115
 dimethyl 2-(4-t-butylcyclohexylidene)methylmalonate, optically active, via Pd-catalysed asymmetric synthesis from *cis* and *trans*-allylic

acetates, 2959
 diterpene quinone-methide, bharangin from *Pygmaeopremna herbaea*, 245
 diterpenes, new C-17 methylated trimeric skeleton from *Hospitalitermes umbrinus*, isolation and NMR studies, 113
 diterpenoid aldehyde (+)-periodial, synthesis and absolute structure, 4591
 diterpenoid oxepans, zoapatanol synthesis, 2867
 diterpenoid phytohormones, synthesis of antheridic acid from gibberellin A₂, 3339
 diterpenoids, new C₂₂-acetoacetylated, isolation of antherioidide A and B from *Anthelia glauca*, 1605
 diterpenoids, new marine including unique hydroperoxide from coral of genus *Pseudopterogorgia*, 4361
 diterpenoids, seco-ent-necolodane cardiophyllidin from *Salvia cardiophylla*, 363
 diterpenoids, novel 6,7-cyclolabdane from *Cuytia richardiana*, 3627
E. coli dehydroquinase, affinity labelling, 6783
E. coli shikimate dehydrogenase, specificity towards analogs of 3-dehydroshikimate acid, 6779
 E-11-hexadecen-1-ol acetate, stereoselective synthesis, pure *trans* plectonones from acylsilane/yliide chemistry, 2777
 eilatin from marine truncate *Eudistoma* sp., 6655
 enantioselective synthesis and absolute configuration of (-)-pulo'pome by asymmetric intramolecular Diels-Alder reaction, 5885
 (+)-epi-myrtine, synthesis via α-metalation of 1-(*t*-butoxy-carbonyl)1,2-dihydropyridines, 1751
 ergostane glycosides, new class from *Tubocapsicum anomalum*, 673
 eudistomin K sulphoxide, antiviral from *Ritterella sigillinoides*, 2255
 forskolin, approach via efficient synthesis of a tricyclic lactone intermediate, 4039
 functionalised epoxide alcohols, synthesis of butadiene-iron tricarbonyl series, 2449
 fungal toxin epimonothiodioxopiperazine, isolation from *Phoma lingam*, 3471
 fungus pigments of grevillin and pulvinone types from benzylacyloins, synthesis, 2085
 furanoid bisnorditerpenoid, malabarolide from *Tinospora malabarica*, 4241
 goniodomin A, polyether macrolide from *Goniodoma pseudogoniaulax*, 1149
 heterocyclic ortho-quinone, bharanginin from *Pygmaeopremna herbaea*, structure, 4881
 hexachloro-metabolite, dyesidamide from *Dysidea* sp, 3863
 hipposterol, trihydroxylated 5,6-seco-sterol from *Hippospongia communis*, 5999
 homothamnone from 2,3-dimethyl-5,6,7,8-tetramethoxy-chromone, 735
 homothamnone, synthesis, 2347
 hydroxy amino acid moiety of A1-77-B, a gastroprotective compd from *Bacillus pumilus*, 6331
 ichthyotoxic diacylglycerols, umbraculmin A and C, structures and isolation from *Umbraculum mediterraneum*, 3613

- indole alkaloid from Aristotelia fruticosae, isolation and structure of aristofruticosine, 3355
- isomeric 8,9,12-trihydroxyeicos-5(2),10(E),14(Z)-trienic acids, enantiospecific synthesis, 5497
- itomanindoles A and B, methylsulphingylindoles from Laurencia brongniartii, 6091
- L-glutamic acid, chiral synthesis of 5-hydroxy-L-pipecolic acids, 2231
- L-gulonolactone, synthesis of D-deoxymannojirimycin and D-mannonolactone; D-gulonolactone, synthesis of L-deoxymannojirimycin and L-mannonolactone, 2871
- lampyrolavin, bioluminescent compod from Lampteromyces japonicus, 1169
- lanosta-9(11),24-dien-3 β -ol to 14 α -methylcholest-9(11)-en-3 β -ol, conversion in Holothuria arenicola, 2159
- lanthiopeptin, new and effective against Herpes simplex virus, structure and comparison with RO 09-098 and immunopotentiating peptide, 4771
- lignans (-) and (+)-burseran, (-)-cubebin, and (-)-hinokinin, total synthesis by diastereoselective conjugate addition of benzyl anions to 2-(R)- and (S)-benzyloxy-2,5-dihydro-4-(3,4-methylenedioxybenzoyl)furan, 3599
- lindenialine and lindeniamine, new alkaloids from Lindenia austrocalendonica, 615
- liverwort Scapania undulata, structure of scapaniapyrone, 6793
- lycocoon-type C-19 diterpenoid alkaloid with C-6oxygenfunction, structure of pubescenine, 2723
- macrocyclic bis(bibenzyl)riccardin C, synthesis, 5039
- manoalide and secomanoalide, synthesis via Pd-catalysed coupling of allylhalide with CO and 2-silyl-4-stannylfuran, 1173
- methyl ester of new gibberellin, GA₁₉, principal antheridiogen in Lygodium japonicum, 3959
- methyl thioacetates, oxidation as a function of S-position using Saccharomyces cerevisiae, 435
- mevinic acid analogs, alternative approach from methyl (3R)-3-hydroxy-5-hexanoate, extension to rational syntheses of (+)-2-(6R)-goniotalamin and its non-natural (-)-(6S)-enantiomer, 4625
- mixed peptide-polypropionate based cyclodepsipeptide (+)-geodiamolide B, total synthesis, 4225
- Murrayella pericladus, isolation of 12-(S)-Hepe, revised structure of acyclic iicosanoid from Laurencia hybrid and biosynthesis of marine prostanoid hybridlactone, 2015
- (+)-monomarine, enantioselective total synthesis, 5767
- mycotoxin (+)-asteltoxin from Aspergillus stellatus, bis(tetrahydrofuran) moiety(C-1 to C-9), stereoselective synthesis, 655
- naturally occurring naphtho[2,3-b]pyran-5,10-quinones, synthesis of α -caryopterone, dihydro- α -caryopterone and their isomers 6-hydroxy-dehydro- α -lapachone and 6-hydroxy- α -lapachone, 155
- neosporol, synthesis, 1669
- new bicyclic C19 terpenoid, xestonone from Xestospongia vanilla, 4357
- new chalcone dimer from Lophira alata, 5797
- new immunomodulating peptide isolated from a fungus, structure and synthesis of FR900490, 5147
- new immunomodulator, structure and isolation of FR 900483 from a fungus, 1725
- new mazamine alkaloids from Xestospongia genus, 3083
- one-step enzymatic synthesis of dihydroanguinarine from protopine, 5625
- optically active acetylenic alcohols, synthesis, 2737
- oxide-olefin cycloadditions, new application and limitation in formation of fused rings possessing functionality in angular Me group, M₄₂ calculations, 715
- partially acetylated dodecanyl tri- and terta-rhamnoside derivs from Cleistopholis glauca, 1837
- pentacyclic aromatic alkaloid ascididemine from Didemnum sp, anticarcinogenic activity, 1177
- pentacyclic natural products via Lewis acid promoted photocyclisation of arylimines, 5213
- peptide part of jaspamide, cyclodepsipeptide from marine sponge, synthesis, 6465
- periplanone-B, approach via intramolecular Diels-Alder reaction with furan-diene and allene-dienophile, 6501
- perylenequinone, synthesis amenable to prep of related natural products, 225
- pheromones of Lobesia botrana and Bombyx mori, new synthesis, 217
- phosphosphingoglycolipid from Turbo cornutus, synthesis, 1189
- phytotoxin bipolaroxin of fungal origin, synthesis of monocyclic analog, 1347
- plant polyprenols, asymmetric hydrogenation, synthesis of dolichols, 5343
- plasmodial pigment fuligorigubin A, total synthesis, use of 4-diethylphosphone-3-oxobutane-thioate for tetramic synthesis, 5829
- polyacetylene melynones from Vanuatu marine sponge, 2037
- polycyclic bilobalide, C₁₅, ginkgolide, enantioselective total synthesis, 3423
- premonensin B, stereoselective synthesis of C(8)-C(20) fragment, 2357
- premonensin B, stereoselective synthesis of C(8)-C(20) fragment, 2357
- (\pm)-prosurugatoxin, synthesis and ring transformation into surugatoxin, 1547
- pulo'upone, total synthesis, 2757
- pyrrolo[2,3-d]pyrimidine nucleoside, mycalisine A, natural, synthesis, 4073
- regio- and stereo-specific ring expansion of optically active cyclopropylvinylcarbinols, diastereoselective synthesis of cis Quercus-lactone b, 1537
- regioselective hydroxylation of acyclic monoterpene alcohols by Aspergillus niger, 579
- S-4-chlorotryptophan, synthesis via resolution, determination of absolute stereochemistry and identification in crude seed protein of Pisum-sativum, 2339
- (S)-manoalide diol, synthesis and absolute configuration of natural manoalide, 2401
- Scelerium alkaloid O-methyl-joubertiamine, synthesis of 4-alkyl-4-methoxyphenyl-cyclohex-2-en-1-ones, 5483
- sesquiterpenes, anisatin-like lactones from Illicium majus, 1165
- sesquiterpenoid coumarins assafoetidin and ferocolicin from Ferula assafoetida, 1557
- sesquiterpenoids, 6 β -acetoxyeudesmanes, transformation by Curvularia lunata yielded 12- or 13-hydroxy derivs, 4471
- spiro-benzoquinonefuran unit in styptodione, synthesis, 3857
- sporol, structure revision, 1665
- stereoselective synthesis of cembranolides via cyclisation of homochiral (α -alkoxy-allyl)stannane precursor, 3899
- stereoselective synthesis of conjugated isobutylamides via arsonium salts, new synthesis of pellitorine, 3949
- Streptomyces lactones, synthesis, 5703
- Strychnos indole alkaloid tubifoline, synthesis and NMR data, 6373
- (\pm)-sulphinene synthesis, 107
- sulphur containing phytoalexin, brassilexin from Brassica juncea, 6447
- sulphur nucleophiles, reactivity towards arenediazonium tetrafluoroborates in aprotic solvents, synthesis of S-aryl thioacetates, 4185
- suspensole, new macrolide component of male Anastrepha suspensa, 6561
- swainsonine in Astragalus oxyphysus, biosynthesis, 4815
- terpene synthesis by baker's yeast, prep of chiral building blocks, reduction of S-functionalised prenyl derivs, 2197
- tetrameric iridoid glucosides, structure and isolation of sambacoisides A, E and F from Jasminum sambac, 1793
- tetranortriterpene, synthesis of polyoxogenated decalin with limonoid structural homology common to salarin and azadirachtin, 1853
- tetranortriterpenoid, azadirachtin, reactions of C-22-23 enol ether double bond and conversion to 22,23-dihydro-23-8-methoxyazadirachtin, antifeedants from Azadirachta indica, 5433
- tetraoxacyclic squalenoid venustatriol, total synthesis, 3171
- (\pm)-tetraponerine-8, stereoselective synthesis, 1691
- tetraosaccharide deriv, synthesis and identification with 1-dephosphorylated compd derived from natural lipopolysaccharide of E coli Re mutant, 6325
- tetronic, thiotetronic and tetramic lactones, phosphorane mediated synthesis, 2063
- thiazole and imidazole metabolites from Aplydium pliciferum, 1099
- trinosesquiterpenoid, total synthesis of (\pm)-trino-anastreptene, 5169
- triterpene anhydride of celastracene, structure of

- celastranhydride, 109
 triterpene quinone-methides, two new compds from *Cassine balae*, revised structure of balaenonol, 387
 triterpenes, trichadenic acid B, constituent of *Phyllanthus flexuosus*, revised structure, 4751
 triyne carbonate L-660,631 methyl ester, synthesis from cyclooctene, 2279
 unusual long chain ketones of algal origin, 2599
 (Z)- α,β -disubstituted acrylates, new stereoselective synthesis, 659
- Neighbouring group participation**
 group effects on regioselectivity of Wittig reactions with maleic anhydrides, 6203
 in acetylation of 1,1,1-triaryl-3-diazo-2-propanones, 1,3-shift of an aryl group via 5-membered transition state, 4193
- Nickel and compounds**
 and Pd-catalysed reactions of methylenecyclopropanes with trimethylsilyl cyanide, 3979
 catalysed dimerisation of 2-cyclopentenone with methylene-cyclopropanes in presence of triethylborane, prep of 6-methylene-bicyclo[3.3.0]octan-2-one, 4539
 catalysed coupling of Grignard reagents with 6-alkyl-3,4-dihydro-2H-pyrans, stereoselective synthesis of trisubstituted alkenes, 2353
 catalysed intramolecular allylation coupled with β -elimination or carbonylation of alkenes and alkynes, 6433
 catalysed ipso displacement of phenolic ethers by Grignard reagents to give arenes, 5553
 complexes of chiral cyclams, epoxidation of alkenes, 877
 containing complex reducing agents NaH-RONa-NiX₂, new efficient desulphurising reagents, 2963
 Ni(CO)₄, mediated cyclocarbonylation of allyl halides and acetylene derivs, improved two-step method, 5811
- Nitramines**
 (+)- and (-)-isonitramines, enantiospecific synthesis from common chiral intermediate, 3311
 via reaction of strained-ring N-heterocycles with dinitrogen pentoxide, 2735
- Nitrates**
 metal-, supported on silica gel, oxidation of alcohols, 6265
- Nitration**
 quantitative regioselective-, of aromatic hydrocarbons in the lab, 5657
 regioselective quantitative-, of aromatic hydrocarbons, quantitative, in the lab, 5909
 two-phase-, of selected phenols, 2471
- Nitrenes**
 expansion of pyridine ring, 489
 phenyl-, acceptor substituted, formation via α -elimination under mild conditions, 1781
- Nitriles**
 α,α -dichloro- β -hydroxy-, synthesis via reaction of trichloroacetonitrile with aldehydes mediated by tri-n-butylstibine, 5275
 aceto-, as solvent in reaction of cyclohexanones with Ph,P and XCCl₄, to give 1,1-dichloromethylene compds, 3003
 allylic substitution and Michael addition, competition with carbanions α to nitriles, 1713
 and ketones and lactams, synthesis via oxidation of amines using iodosobenzene, 6913
 azobisisobutyl-, induced radical additions of tributyltin hydride, synthesis of higher carbon sugars, 2335
 benzoylacet-, Hunig's base-MgCl₂, mediated C-alkylation and O-acylation, 3437
 chemoselective hydrolysis of-, by tetrahalophthalic acids, 6557
 oxide of-, intramolecular cycloadditions, formation of functionalised cyclic ethers, 4169
 oxides of-, azides, nitrilimines and nitrilylidenes, 1,3-dipolar cycloaddition with 1-chloro-2-phenyl-2-trimethylsilyl-2-phosphaethene, 785
 selective synthesis from prim amides, 2155
- Nitrilimines**
 and azides, nitile oxides and nitrilylidenes, 1,3-dipolar cycloaddition with 1-chloro-2-phenyl-2-trimethylsilyl-2-phosphaethene, 785
- Nitro acids and esters**
 nitrate esters, prep via reaction of strained-ring oxygen heterocycles with dinitrogen pentoxide, 2731
 nitrophenyl acetates, hydrolysis, pH dependence and regioselectivity using dimethyl- β -cyclodextrin bearing imidazolylethyl group as catalyst, 311
- Nitro compounds**
 1,3-dinitroalkanes, heterocycle formation, synthesis of pyrazole, 6001
 5-nitroimidazoles, 1-methyl-2-substituted, rearrangement to 4-nitroimidazoles via CH₂ as catalyst, 5361
 β - and γ -nitro ketones, asymmetric reduction by Baker's yeast, 4769
 γ -nitro ketones, synthesis of 5-membered cyclic nitrones, 1685
 aromatic-, via oxidation of aromatic amines, 4501
 aromatic/aliphatic groups, selective reduction by sodium sulphide, 635
 gem-nitro imidazolyl alkanes S_{RN1} reaction, nitro group replacement by nitronates to give imidazoles with t-alkyl chain on position 1, 2567
 nitro-olefins, conjugated conjugated, new acylmethylation of aromatic compds, 2977
 nitroalkanes, nitrous acid elimination path for thermal decomposition, 2805
 nitroalkanes, stereospecific conversion into amines via transfer hydrogenation, 5733
 nitroarenes, reactivity with allyl magnesium chloride, synthesis of N-allyl-N-arylhydroxylamines and N-allylanilines, 2251
 nitrobenzene, reduction to aniline in presence of aldehydes, alkyl halides and acid halides, 5083
- nitrocarbene, nitrodiazomethane as a source, 987
 nitrocarbenes, rearrangement to acyl nitroso compds, 5719
 nitrodiazoacetic acid, synthesis, reactivity and structure, 6031
 tricyclic nitro ergoline synthon, entry into via asymmetric synthesis, 4543
 trinitroanisole, reaction with 1,3-dicarbomethoxyacetone, X-ray structural analysis of product, 6757
- Nitrones**
 and azomethine imines, [6 π +4 π] cycloadditions of 5-azoniafulvene ions, 4415
 cyclic-, 5-membered, synthesis from γ -nitro ketones, 1685
 cycloaddition of-, effect of N-t-Bu group and reaction of hydroxylamines with methyl propiolate, 307
 cycloaddition of-, using 2,3-(diphenylsulphonyl)-1-propene as allene equivalent, 265
 diastereoselective intramolecular cycloadditions to α,β -unsaturated esters, 2881
 intramolecular 1,3-dipolar cycloaddition with allyl-thioether groups and reductive cleavage with desulphurisation, diastereoselective synthesis of α,γ -aminoalcohols, 5755
 new addition of trialkyl phosphite and alkyl halide, prep of N-substituted 1-(alkoxy-amino)alkylphosphonates, 663
- Nitrosamines**
 diazenium ions derived from-, displacement of O-vs N-substituents by three divergent mechanisms, 2903
- Nitroso compounds**
 α -hydroxyacyl-, compds, Diels-Alder cycloaddition, asymmetric induction, 6173
 acyl-, via rearrangement of nitrocarbenes, 5719
- Nitro sugars**
 branched-, by Henry reaction of 3-nitrobutanal with aldehydes, synthesis of unnatural D-evernitroso analogs, 6083
- Nitroxides**
 via dimethyldioxirane conversion of sec amines, 4677
- N-oxides**
 dinitrogen pentoxide, reaction with strained-ring N-heterocycles, prep of nitramines, 2735
 dinitrogen pentoxide, reaction with strained-ring O-heterocycles, prep of nitrate esters, 2731
 N-H pyrrolidines, prep via intermolecular [3+2] cycloaddition between olefins and ylide generated from amine N-oxide designed to allow dealkylation of cycloadduct, 3481
 nitrile oxide [3+2] cycloaddition, approach to retinoids, 1307
 nitrile oxide, intramolecular cycloadditions, formation of functionalised cyclic ethers, 4169
 nitrile oxides, cycloaddition with Oppolzer's chiral sultam, model for asymmetric induction in non Lewis acid catalysed reactions of Oppolzer's chiral sultam,

- 3555
pyridine-, radical stabilising
function, enhanced rate for
methylenecyclopropane
rearrangement, 749
pyrrolidine-1-oxides, substituted
and functionalised, prep, 1685
"saubulacine N-oxide" identical
with 18,28-epoxy-1 α -hydroxy-
methyl-8 α -pyrrolizidine, 4943
- Nuclear magnetic resonance**
¹³C and ¹H NMR., of new bicyclic
C19 terpenoid, xestanone from
Xestospongia vanilla, 4357
¹³C NMR, and theoretical results,
ground-state of double bond of
anti-sesquiorbornene either
pyramidal with low barrier to
inversion or planar, 19
¹³C and ¹⁹⁹Hg NMR, trans-
acetoxymercuration of
diphenylacetylene, 4631
¹³C and ¹H NMR study of ortho
lithiation of Li-salts of alkyl
phenyl sulphones, 1529
¹³C and ¹H NMR, 2-D-heteronuclear
and NOE studies, two new
quinone-methides from *Cassine*
balae, revised structure of
balaenol, 387
¹³C and ¹H NMR, lycocotinine-type
C-19 diterpenoid alkaloid with
C-6oxygenfunction, structure of
pubescenine, 2723
¹³C and ¹H NMR, novel 6,7-
cycloabdane from *Curtia*
richardiana, 3627
¹³C and ¹H NMR, structure and
absolute stereochemistry of
somiferine and its O-methyl
ether, 3115
¹³C and 2D1H NMR, synthesis of
chiral dioxolanes from (-)-
shikimate and β -ketoesters,
configuration of newly created
asymmetric center in dioxolane,
4555
¹³C NMR and theoretical analysis
of homoconjugative orbital
interactions of *syn*-
sesquiorbornatriene alkylidene
derivs, 4213
¹³C-H NMR interglycosidic
coupling constants, approach to
disaccharide conformations, 199
¹³C NMR chemical shifts, effect of
prim and sec deuterium on
trigonal carbons of allylic
alcohols, 3945
¹³C NMR of tetrameric iridoid
glucosides, structure and
isolation of *sambacoides* A,E
and F from *Jasminium sambac.*,
1793
¹³C NMR of tris(phenylethynyl)-
methyl and α,α -bis(phenyl-
ethynyl)benzyl cations; tris-
and bis-ethynologs of triphenyl-
methyl cation, 5157
¹³C NMR studies on pyromethane
cofactor of hydroxymethylbilane
synthase, 2591
¹³C NMR, anomeric configuration of
sialic acid and derivs, 6317
¹³C NMR, camphanylboronic acid,
chiral derivatising agent for
diols, 6063
¹³C NMR, hexachloro-metabolite,
dysidamide from *Dysidea* sp, 3863
¹³C NMR, regiochemistry of
reaction of halosilane with
oxide of vinyl 2-furan, styrene
and 1-butene, 3307
¹³C NMR, structure of
scapaniapyrone from liverwort
Scapania undulata, 6793
¹³C NMR, total synthesis and
structure of suspensolide, 6565
¹³C NMR, vicinal isotope effects,
stereochemical assignment for
monodeuterated allylic alcohols,
6095
2-D heteronuclear ¹H-¹³C shift
correlated NMR, structure of
celastranhydride, 109
2D NMR, new mazamine alkaloids
from *Xestospongia* genus, 3083
2D-NMR and biogenesis of
anethiolide A and B from
Anethelia glauca, 1605
¹H NMR differential relaxation and
Noe using chirally deuterated
sugars, preferred conformation
in soln of each α and β (1-
5)linkage of oligomannoses, 4457
¹H NMR evidence for β -sheet
formation in conformational
analysis of
¹H NMR of spontaneous
rearrangement of oxidative
deamination of sec-alkyl primary
amines with 3,5-di-*t*-butyl-1,2-
benzoquinone, 851
¹H NMR spectra of highly charged
multi-triphenylmethyl ions,
5501
¹H NMR, 12,12,21,21-tetradeterio-
1,4-
dioxal[4.3.3](1,3,5)cyclophane,
conformation, 6275
¹H NMR, assignment of chemical
shift values to N-trityl L-
homoserine lactone, 5045
¹H NMR, sporal structure revision,
1665
¹H, ⁷Li and ²⁹Si NMR, unexpected
affects of reactions of higher
order cyanocuprates with Me₃Si-
X, 6677
1-hydroxy- and 3-hydroxy-*trans*-
7,8-dihydro-7,8-dihydroxy-
benzofalpyrene, synthesis, 3513
22,23-dioxygenated milbemycin,
stereochemistry, 6645
2,3,6,6-perdeutero-cyclodextrins,
structure detn, 4467
alkaloid metabolites of *Eudistoma*
sp, segoline A, isosegoline A
and nor-segoline, 3861
anomalous Vilsmeier reaction, 3391
bridged thiazolium salts,
synthesis and structure, 1323
conjugated dienes, Pd-catalysed
1,4-diacetoxylation, evidence
for (π -allyl)Pd(II)(quinone)
complexes involvement, 2243
data, new immunomodulator,
structure and isolation of FR
900483 from a fungus, 1725
deacetyl glykenins A,B and C from
Basidiomyces sp, structures,
5287
direct NMR proof of ring-chain
tautomerism in thiazolidine
system, 5427
double ¹³C-labelling, conformation
of succinic acid deriv, 757
dynamic NMR, conformational
studies of steric barrier and π -
barrier to rotation in simple
enamines, diethylamino-
cyclohexenes, 3141
Hantsch cyclisation of ethyl 4-
chloro-2-benzylidene-
acetoacetates with methyl 3-
aminocrotonate to 2-
chloromethylenel[2,3,4-
tetrahydropyridine-3,5-
dicarboxylic ester,
configuration at C-, 6335
new nucleoside antibiotic,
structure of capuramycin, 2343
NOE techniques,
NOE, phase-sensitive two
dimensional, of sulfoamycin 1 and
berminamycin A, 1401
¹⁷O NMR, origin of deshielding
effects in rigid, planar
molecules, 2143
- polyacetylene melynes from *Vanuatu*
marine sponge, 2037
retinoic acid, reaction in
sulphuric acid, 6279
spectroscopic and conformational
properties of spirocyclic
oxaziridines, 6407
studies, new C-17 methylated
trinervitene skeleton from
Hospitalitermes umbrinus, 113
trinosesquiterpenoid, total
synthesis of (\pm)-trinor-
anastreptene, 5169
variable temp ⁷⁷Se NMR,
conformational changes in 2,11-
diseinal[3.3]metacyclophane, 5587
Strychnos indole alkaloid
tubifoline, 6373
- Nucleic acids**
5-acylaminoaracils and 5-
acylaminoisouracils-4(3H)-ones,
ring transformation into
imidazoles, 4607
7-iodo-2',3'-dideoxy-7-deazapurine
nucleosides, synthesis and key
intermediates in prep of
reagents for automated
sequencing of DNA, 4061
8-hydroxyadenosine-5'-mono-
phosphate, identification as
oxidation product of AMP by
manganese porphyrin associated
with potassium hydrogen
persulphate, 6615
and/or proteins, cross-linking by
2,2'-bis(methoxymethylene)-2,2'-
sulphonyldiacetonitrile, 5847
bis-des-hydroxy, bis-des-methoxy
CC-1065, synthesis, DNA binding
and biological activity, 131
DNA crosslinking and synthesis of
dimeric anthramycin analog, 5105
DNA fragments, synthesis via
phosphoramidite intermediates,
use of 1,1,1,3,3,3-hexafluoro-2-
propyl protecting group, 81
DNA study, synthesis of parent
carbo-cyclic subunit of neoocar-
zinostatin chromophore A, 909
DNA synthesis containing dihydro-
5-aza- and 5-azacytosine bases
via synthesis of phosphoramidite
of 2'-deoxy-5,6-dihydro-5-
azacytidine, 1767
DNA synthesis, improved hydrogen-
phosphonate method, novel
activating and capping reagents,
861
phenylalanine transfer ribonucleic
acids, isolation of tricyclic
fluorescent nucleoside, access
to synthesis of wybutosine, 4129
RNA fragments, solid phase
synthesis, 577
(S)-N'-(3-hydroxy-2-phosphonyl-
methoxy)propylcytosine,
synthesis, 5475
- Nucleophiles**
fluorination at C5', synthesis of
new class of 5'-fluoro-5'-S-
aryl(alkyl)thionucleosides from
adenosine, 5729
internal-, conjugate addition to
chiral vinyl sulphoxides with
stereogenic center at allyl-C,
"intramolecular" double
asymmetric induction, 3121
malonate, reactivity with (n -1-
substituted-pentadienyl)-
(tricarboxyl)iron cations, 1343
nucleophilic species formed by
desilylation of fluoro-
silyloxiranes by fluoride ion
promotes reaction with
electrophiles, 5923
reaction with 1,2,3,4-diepoxydes,
4405

Nucleosides

- 2',3'-dideoxy-, new synthesis for Aids therapy, 1239
- 2-cyanoethyl nucleoside 3'-phosphonates as starting materials for oligonucleotide synthesis, 4143
- 3'-C-cyano-3'-deoxythymidine, synthesis, 941
- 3'-cyano-3'-deoxythymidine, short synthesis, 2995
- 3'-O(S-alkyl) and 3'O(S-aryl) methylphosphonothioates, synthesis and P-diastereomeric resolution, 1227
- 3'-azido-3'-deoxythymidine and 3'-azido-2',3'-dideoxyuridine, total stereoselective synthesis from D-mannitol, 5349
- 3-methylguanosine via chemical degradation of wyosine, 4163
- 5'-aldehydes of-, tributyltin radical induced cyclisation, 75
- 5'-fluoro-5'-S-aryl(alkyl)-thionucleosides from adenosine, synthesis of new class, fluorination at C5' of nucleosides, 5729
- 5'-O-trityl-3'-keto-2'-deoxythymidine, direct conversion to 1-(2-deoxy-3-methyl-beta-D-xylosyl)thymine, 3769
- 5-vinyl- and 5-ethynyl-2'-deoxyuridine-5'-triphosphates, synthesis, 4525
- 7-iodo-2',3'-dideoxy-7-deazapurine-, synthesis and key intermediates in prep of reagents for automated sequencing of DNA, 4061
- acyclic-, analogs, synthesis of 1-(hydroxyalkoxy)pyrimidines, 4013
- acyl-, antiviral, synthesis of 9-(3-hydroxypropoxy)guanine, 701
- acyl-, antiviral, synthesis of 9-(hydroxyalkylamino)guanines, 5995
- C-, biosynthesis, enantiospecific synthesis of L-(3R and 3S)-(β-D-ribofuranosyl)-pyroglutamic acids as possible intermediates, 375
- C-, thieno[3,4-d]pyrimidine analog of inosine, two-step synthesis via C-glycosylation of substituted heterocycles under Friedel-Crafts conditions, 3537
- (-)-carbocyclic 2',3'-dideoxythymidine a potential anti-aids agent, stereospecific synthesis, 2681
- carbocyclic-, (-)-neplanocin A and (-)-aristeromycin, synthesis via application of dimethyl (R)S-2-(10-isobornylsulphinyl)maleate, chiral synthetic equivalent of dimethyl acetylenedicarboxylate, 6143
- (-)-carba-2',3'-dideoxythymidine and (-)-carba-2',3'-dideoxy-3'-fluorothymidine, prep from (+)-endo-5-norbornen-2-ol using enzymatic and chemical synthesis, 5745
- cytidine 5'-triphosphate, generation using adenylate kinase, 1123
- deoxynucleoside phosphorofluoridates, synthesis, 3301
- deoxyribo-, 3'-hydrogenphosphonates, synthesis, 1037
- dinucleoside phosphorodithioates, synthesis and characterization, 2911
- dinucleoside phosphorodithioates, synthesis via thioamides, 5517
- guanine derivs substituted in O-position by mitomycin C, synthesis, 4673

- new type of bifunctional silyl protective group, tetra-t-butyloxydisiloxane-1,3-diyl, 1561
- new-, structure of capuramycin, 2343
- nucleoside-3',5'-cyclic phosphorothioates by cyclothiophosphorylation of unprotected nucleosides, 2803
- oxetane-, approach to synthesis via reaction of adenine with an α-chlorooxetane, 1451
- oxetanocin with an oxetane ring, synthesis of chiral D-oxetanosyl acylates, 4739
- oxetanocin with oxetane ring, synthesis, 4743
- phosphoramidite of 2'-deoxy-5,6-dihydro-5-aza-2-oxetidine, synthesis and application to synthesis of DNA containing dihydro-5-aza- and 5-azacytosine bases, 1767
- prospective synthon for C-nucleoside, enantioselective synthesis of β-D-ribofuranosylmalonate via high pressure Diels-Alder reaction of furan with di-1-menthyl acetoxyethylene malonate, 5397
- pyrrolo[2,3-d]pyrimidine-, mycolisine A, natural, synthesis, 4073
- tricyclic fluorescent-, isolated from phenylalanine transfer ribonucleic acids, access to synthesis of wybutosine, 4129
- uracil-, cerium(IV) catalysed iodination at C-5, 2855

Nucleotides

- acyclic oligo-, solid phase synthesis of use and prep of glyceronucleoside phosphoramidite synthons, 4831
- capped oligoribo-, new synthesis via use of protected 7-methylguanosine diphosphate deriv as donor for triphosphate bond formation, 2969
- lipophilic nucleotide phosphate analogs, synthesis of lipophilic isostere of ATP, 1615
- new acyclic-, (S)-N¹-(3-hydroxy-2-phosphonylmethoxy)-propylcytosine, synthesis, 5475
- oligo-, large-scale synthesis by H-phosphonate method, 2619
- oligo-, synthesis by use of cellulose acetate deriv as polymer support for phosphotriester approach, 647
- oligo-, synthesis, 2-cyanoethyl nucleoside 3'-phosphonates as starting materials, 4143
- oligo-α- and oligo-β-deoxy-, covalently linked to acridine, solid phase synthesis, 5905
- oligodeoxy-, phosphotriesters, removal of methyl phosphate protecting group with 2-mercaptobenzothiazole reagent, 5479
- oligodeoxy-, synthesis, improved hydrogen-phosphonate method, 861
- oligodeoxyribo-, containing 5'-aminoalkylphosphonates, synthesis, 5537
- oligodeoxyribo-, synthesis by phosphoramidite method, 81
- oligonucleotide labelling, synthesis of a modified thymidine phosphoramidite, 5221
- oligoribo-, N-phenoxycetylated guanosine and adenosine phosphoramidites in solid phase synthesis of ribozyme sequence, 4249
- oligoribo-, synthesis by phosphoramidite approach using 5'-levulinyl and 2'-tetrahydrofuran protection, 5383

Olefins

- α-deuterated functional-, synthesis using deuterium oxide and potassium carbonate, Wittig-Horner reaction in heterogeneous media, 477
- additions of ribofuranosyl radical, synthesis of showdomycin, 351
- aerobic oxidative carbonylation, prep of 8-hydroxyalkanoic acid derivs, 4435
- aliphatic and aromatic-, selective epoxidation with t-butyl hydroperoxide and a molybdenum oxide chelate, marked effect of catalytic amount of an amine, 2843
- alkylidene- and allylidene-cyclopropanes, synthesis, 25
- allylations of-, intramolecular, Pd-catalysed, synthesis of N- or O-containing ring systems, 4709
- and ketones, electrocatalytic, oxidation based on Ru^{II}/Ru^{III}-H₂O system, 765
- and sulphinate esters and unsymmetrical bisallylic sulphones, prep via conversion of 4-(2'-alkenesulphinyl)-morpholine, isolation of some functionalised 2-alkenesulphinic acids, 3255
- bicyclic systems, stereocontrolled syntheses and evidence for allyl Pd/olefin-*cis*-insertion, intramolecular olefin allylations, 4705
- C-C bond formation in A₂ reactions, new method using PhIO.HBF₄ complex and silyl enol ethers, 3703
- carbohydrate derived lactols, unusual reactions with stabilised phosphorus ylides, specific intramolecular OH group effect leads to high selectivity, 6823
- cathodic promotion of Horner reaction, 3007
- cyclic-, intramolecular aryl- and alkenyl-palladation catalysed by Pd-phosphine complexes, 2915
- electron deficient-, reaction with dibromomalonate ester in presence of trialkylstilbene to give cyclopropanes, 1033
- intermolecular [3+2] cycloaddition with ylide generated from amine N-oxide designed to allow dealkylation of cycloadduct, prep of N-H pyrrolidines, 3481
- intramolecular [2+2] cycloadditions of vinyl ketenes, synthesis of linear annelated triquinane derivs, 459
- mechanistic aspects of asymmetric *cis*-dihydroxylation with osmium tetroxide using C₂-symmetric chiral diamine, 573
- methoxyphenylcarbene, extraordinary selectivity, case of the curious "olefin", 2559
- new strained bridgehead-, synthesis of 3,4,7,8,9,10-tribenzobicyclo[4.2.2]deca-1,3,7,9-tetraene, 2329
- new strained-, with high unsaturation, synthesis of tribenzotricyclo[5.3.0.0^{1,4}.0^{2,5}.0^{3,6}]-2,5,7,9-tetraene, 2333
- nitro-, conjugated, new acylmethylation of aromatic comds, 2977
- non-activated-, ene-type reaction with "activated sulphoxide" to give allylsulphonium salt and counter-ion dependent (1,2)- vs [3,2] rearrangement of ylide generated from the sulphonium salt, 6637
- nucleophilic-, supported

- epoxidation catalyst; 971
 oxidation, application, synthesis of optically active dioxo-cyclam macrocycle derived from L-phenylalanine, 5091
 oxime-, intramolecular cycloaddition, stereospecific formation of functionalised pyrrolidines, 5373
 radical-, coupling, Co-mediated, regeneration of olefin functionality in final product, 167
 reaction with dicobalthexacarbonyl complexes of internal alkynes to give cyclopentenones, steric control in Pauson cycloaddition, 999
 reaction with nitrodiazomethane in presence of Rh-acetate to form nitrocyclopropanes, 987
 samarium iodide initiated addition of fluoroalkyl iodides, 5129
 simple flow reaction for transfer hydrogenation, 5599
 substituted-, direct prep from epoxides using lithium tetraalkylcerate, 5165
 with aryl group at olefinic C atom, reaction with nitrosonium hexafluorophosphate in acetonitrile afforded 4H-5,6-dihydro-1,2-oxazines with two aryl groups at C-4 and C-6, 4437
- Osmium and compounds**
 tetroxide of-, mechanistic aspects of asymmetric *cis*-dihydroxylation of olefins using C₂-symmetric chiral diamine, 573
- Oxadiazoles**
 1,3,4-, as heterocyclic 4n-components in Diels-Alder reactions, 3231
- Oxadiazolidines**
 2,2'-carbonyl-bis(3,5-dioxo-4-methyl-1,2,4-, use in synthesis of β-keto ester units of diaminins, 2661
- Oxathianes**
 1,3-, 2-phosphoryl substituted, solution and solid state conformation, 6801
- Oxazines**
 4H-5,6-dihydro-1,2-, with two aryl groups at C-4 and C-6 via reaction of nitrosonium hexafluorophosphate in acetonitrile with olefins with aryl group at olefinic C atom, 4437
 oxazinone vs allene formation in reaction of propargyltrimethylsilane reaction with N-alkoxycarbonyliminium ions, 367
- Oxaziridines**
 acid catalysed oxygen transfer to a thioether, 2817
 N-sulphonyl-, use in oxidation of enamines to α-hydroxy ketones and α-amino ketones, 4365
 spirocyclic-, spectroscopic and conformational properties, 6407
- Oxazoles**
 [4+2] cycloaddition of singlet oxygen, formation of oxazole endoperoxides, 1003
- Oxazolidines**
 and acetals and imidazolidines as chiral auxiliaries, diastereoselective conjugate addition, 4411
 N-aryl-2-oxazolidinones, ring opening by anhydrous alkoxide, prep of N-(alkoxyethyl)-2,6-disubstituted anilines, 5095
- Oxazolines**
 α-phenylthio-α,β-unsaturated-, conjugate additions on, synthesis of 3,4-disubstituted coumarins, 5901
 trans-5-alkyl-2-oxazoline-4-carboxamides, diastereoselective and entioselective prep and conversion into threo-β-hydroxyamino acids, 5321
- Oxazolones**
 reagents derived from-,
- Oxepins**
 4,5-polymethylene-3,6-hexano-, oxidation with ruthenium tetroxide, prep of macrocyclic bis-α-diketones, 189
- Oxetanone**
 2-, synthesis by intramolecular ring cleavage, 6573
- Oxetans**
 α-chloro-, reaction with adenine, approach to synthesis of oxetane nucleosides, 1451
 α-chloro-, synthesis and X-ray structure, 1449
 oxetanocin with an oxetane ring, synthesis of chiral D-oxetanosyl acylates, 4739
 oxetanocin with oxetane ring, synthesis, 4743
 vinylic-, Pd-catalysed coupling with organomercurials, synthesis of homoallylic alcohols, 5069
- Oxidation**
 4,5-polymethylene-3,6-hexanooxepins with ruthenium tetroxide, prep of macrocyclic bis-α-diketones, 189
 α-amino acids under Mitsunobu reaction conditions, 4661
 α-hydroxy esters to α-keto esters using Deress-Martin periodinane reagent, 3433
 alcohols using dimethylsulphoxide and trichloromethyl chloroformate, 6619
 alcohols with metal nitrates supported on silica gel, 6265
 alkanes to alcohols and ketones via biomimetic electrochemical system using manganese tetraphenylporphyrin chloride and imidazole as catalysts and acetic acid as proton donor, 205
 amines using iodosobenzene, synthesis of nitriles, ketones and lactams, 6913
 AMP, by manganese porphyrin associated with potassium hydrogen persulphate, identification of 8-hydroxyadenosine-5'-monophosphate as product, 6615
 anodic-, of cycloheptatriene into tropone and tropolone, 555
 anodic-, of substituted indenones to 4-aryl isocoumarins, 543
 aromatic amines in presence of "electron rich" aromatic systems, 4501
 bis(2-hydroxy-3,5-di-t-butylphenyl)methanone, prep and photochemical reactivity of spirodienone, 5673
 bis(carboxy)iodobenzenes, Hg-mediated synthesis, 2033
 bromine as oxidant, use in direct conversion of aldehydes to esters, 5087
 controlled, regioselective-, with fluorine, of pyridine carboxylic acids and esters, 4389
 cyclohexene with H₂O, using heteropoly-11-tungstates, 823
 (diacetoxyiodo)benzene-, of quinols and extended quinols to quinones, 677
 dimethyldioxirane-, of allenyl alcohols yields functionalised tetrahydrofuran and tetrahydrofuran derivs via intramolecular nucleophilic addition of OH group to intermediate allene diepoxide, 4791
 (E)-4-stilbenols, oxygenation catalysed by cobalt aschiff base chelates, 6629
 electrocatalytic-, of, glefins, and ketones based on Ru V=O/Ru -H₂O system, 765
 electrochemical-, new synthesis of 4-acetoxy-2-azetidines, 1409
 enamines to α-hydroxy ketones and α-amino ketones using N-sulphonyloxaziridines, 4365
 enantioselective-, of trans-stilbene with C₂-symmetric chiral diamine, stereochemistry, 573
 enol ethers by metal(VI)oxide diperoxides, 3145
 enzymatic-, indirect electro in situ regeneration of NAD and NADP⁺ using iron bipyridine and phenanthroline complexes as redox catalysts, 3299
 L-phenylalanine by modified Udenfriend system, 2177
 m-chloroperbenzoic acid-, of allylidene cyclopropanes to 2-vinylcyclobutanones, 27
 methyl thioacetates, as a function of S-position using *Saccharomyces cerevisiae*, 435
 microbial-, of benzene, prep of cellular secondary messenger myo-inositol-1,4,5-trisphosphate and related derivs, 5303
 mild-, of 1,1-diorganometallics to aldehydes and ketones, new stereoselective approach to aldol products, 6697
 mild-, of amines to aldehydes and ketone, 6701
 Mn(III)acetate-, of N-protected indolines, 2151
 new selective-, of alcohols with ester group with an oxoammonium salt, 5671
 olefin-, application, synthesis of optically active dioxo-cyclam macrocycle derived from 5091
 olefins to ketones via multistep catalysis by molecular oxygen in chloride free media, 2885
 peracid-, of isoxazolines, route to β-hydroxy ketones and acylated diols, 6703
 Pfitzner-Moffat-, phenyl dichlorophosphate as activating agent, 3167
 reactivity of monothio- and monoseleno-acetals towards-, in synthesis of substituted 2,3-dihydrofurans, 2179
 regioselective-, of 1-alken-4-ols, Pd-catalysed, new synthesis of γ-butyrolactols, 5181
 reversible electrochemical-, of 2,5,8,11-tetra-t-butyl-peri-xanthenoxanthene to its radical cation and dication, 4533
 selective oxidants, telluramine derivs, 2671
 set-, of N,N-dimethyl-p-anisidine, ESR identification of paramagnetic species, 2463
 sodium perborate-, of cyclic and acyclic alkenes to oxiranes or vicinal acetoxy alcohols, 2967
 substituent directed-, regio- and stereoselective cyclisation of cycloalkenols with ceric

- ammonium nitrate, 1771
 substituent-directed-, competition
 in prep of α -chloroketones by
 oxychlorination of alkenes with
 chlorochromate reagents, 6707
- Swern-, of diverse alcohols using
 oxalyl chloride-DMSO yielded
 products resulting from
 electrophilic chlorination, 49
- t-butyl hydroperoxide catalysed by
 CrO₃, alkynes to conjugated
 acetylenic ketones, 2321
- vinyl anions, stereo- and
 regioselective formation of
 silyl enol ethers, 4269
- Oximes**
 aldoximes, addition of organo-Li
 reagents to give hydroxylamines,
 3455
- cobaloxime mediated radical alkyl-
 nitroalkylation cross coupling,
 6545
- intramolecular cycloaddition of
 vinyl sulphones, 2417
- olefin intramolecular
 cycloaddition, stereospecific
 formation of functionalised
 pyrrolidines, 5313
- reductive formylation, synthesis
 of isonitriles, 3343
- regio- and stereo-specific class 2
 tandem Michael addition-
 cycloaddition reactions, 4323
- Oxiranes**
 β -bromovinyl-, via CrCl₂ mediated
 stereoselective conversion of
 aldehydes, 6107
- Co-catalysed regioselective
 cleavage with acyl chlorides,
 4985
- deoxygenation via aluminium
 triiodide reagent, 5815
- fluorosilyl-, nucleophilic species
 formed by desilylation by
 fluoride ion promotes reaction
 with electrophiles, 5923
- or vicinal acetoxy alcohols via
 sodium perborate oxidation of
 cyclic and acyclic alkenes, 2967
- ring-opening by silyl-substituted
 allyl anions, a regiochemical
 chameleon, 4281
- trans and cis-Z vinyl-, addition
 to LiMe₂Cu, diastereoface
 selectivity to give syn-Z diol
 and anti-E diol, 913
- Oxonium ions**
 methoxycarbonyl-, synthesis of
 oxacyclic carboxylic esters,
 evidence for cationic oxa-Cope
 rearrangement, 6365
- photosensitised-, of 2,3-
 dihydropyrazines, synthesis of
 isonitriles, 1127
- Ozonolysis**
 1-acetoxy- and 1-chloro-2,3-
 diphenylindene, selective
 formation of new solvent derived
 products, 3375
- Palladium and compounds**
 alkyl- and π -allyl-, species,
 hydride ion capture, tandem
 cyclisation-anion capture, 4329
- carbopalladation catalysed by Pd-
 phosphine complexes, synthesis
 of carbobicyclic and
 carbopolycyclic comds, 2915
- carbopalladation of allenes,
 synthesis of silylated 1,3-
 dienes, 627
- carbopalladation of allenic
 hydrocarbons, use of vinyl
 trifluorosulphonates, 4089
- catalysed 1,4-diacetoxylation of
 conjugated dienes, evidence for
 involvement of (π -allyl)Pd(II)
 (quinone) complexes, 2243
- catalysed allylic C-alkylation of
 heterocyclic β -dicarbonyl
 triacetic acid lactone and
 tetric acid, 581
- catalysed annulation using
 bifunctional allylic alkylating
 agent, 5663
- catalysed asymmetric synthesis of
 optically active dimethyl 2-(4-
 t-butylcyclohexylidene)-
 methylmalonate from cis and
trans-allylic acetates, 2959
- catalysed carbonylation of allyl
 phosphates and allyl acetates,
 selective synthesis of β , γ -
 unsaturated esters, 4945
- catalysed carbonylative
 symmetrical coupling or
 siloxycyclopropanes, synthesis
 of 4-keto pimelates, 1541
- catalysed coupling between
 cephalosporin derivs and
 unsaturated stannanes, new
 ligands for Pd chemistry, 5739
- catalysed coupling of
 organomercurials and vinylic
 oxetanes, synthesis of
 homoallylic alcohols, 5069
- catalysed coupling of trans-1,2-
 bis(tri-*n*-butylstannyl)ethylene
 with aromatic halides, synthesis
 of substituted trans- β -
 bromostyrenes, 2783
- catalysed coupling of vinylic
 halides or triflates and
 unsaturated carboxylic acids,
 synthesis of vinylic lactones,
 6399
- catalysed cross coupling,
 synthesis of 2- and 4(5)-(2-
 pyridinyl)imidazoles, 5013
- catalysed cross-coupling reaction
 of 1-bromo-1-phenylthioethene or
 (E-or(Z)-2-bromo-1-phenylthio-1-
 alkenes with 9-alkyl-9-BBN,
 stereoselective route to alkenyl
 sulphides, 3983
- catalysed cyclic acylmetallation
 of allylic electrophiles, route
 to cyclopentenone derivs, 6745
- catalysed cyclisation of vicinal
 diol allyl acetates to cyclic
 ethers, 2927
- catalysed cyclisation via intra-
 molecular carbopalladation of
 alkenyl and aryl halides with
 α , β -unsaturated carbonyl groups,
 3903
- catalysed cyclisations of 1-
 acetoxy-2-methylene-6-heptenes,
 consistent with allyl-Pd/olefin
 insertion involving metal
 transfer to distal alkene
 terminal, 5529
- catalysed hydrostannation of
 alkynes and hydrostannolysis of
 propargyl or propargyloxy
 carbonyl derivs of functional
 groups, 619
- catalysed intermolecular allylic
 arylation of cycloalkenes, 905
- catalysed intramolecular arylation
 and vinylation, synthesis of
 bioactive and polyoyolic alkenes,
 2919
- catalysed key steps in synthesis
 of ambergris fragrance chemicals
 from sclareol, 1017
- catalysed reaction of 2-
 alkynylanilines with
 allylchlorides, formation of 3-
 allylindoles, 1799
- catalysed reductive enyne
 cyclisation, synthesis of β -
 necrodiol, 1231
- catalysed regio- and
 stereoselective functional-
 isation of dienes, synthesis of
 (\pm)-sativene, 5973
- catalysed regiocontrolled
 alkylations of vinyl epoxides,
 tin mediated, 2931
- catalysed regioselective oxidation
 of 1-alken-4-ols, new synthesis
 of γ -butyrolactols, 5181
- catalysed regioselective reaction
 of silyl-substituted allylic
 carbonates with vinyl epoxide,
 343
- catalysed selective deprotection
 of allyl and allylcarbonyl
 groups in phosphate chemistry in
 presence of propargyl and
 propargyloxy carbonyl groups,
 623
- catalysed synthesis of N- or O-
 containing ring systems,
 intramolecular olefin
 allylations, 4709
- catalysed synthesis of new
 bicyclo[2.2.1]hept-2-ene-carbon
 monoxide copolymers, 2115
- catalysed synthesis of related
 dienes of 1 α ,25-
 dihydroxyvitamin D₃, 1203
- catalysed twofold [3,3]sigmatropic
 rearrangement, synthesis of
 axially dissymmetric 3,5-
 octadiene framework with C₂
 chirality, 1157
- catalysed vinyl iodide-
 ethynylstannane coupling,
 synthesis of terbinarins, 1509
- catalysis in new approach to
 construction of Z-propenyl side
 chain at C(3) of cepham nucleus,
 6043
- concise catalysed approach to (\pm)-
 lysergic acid, 3117
- mediated formation of Δ^1 - and Δ^2 -
 carbapenems by cyclo-
 functionalisation of 4-
 allenylazetidiones and 4-(2-
 propenyl)azetidiones, 4257
- promoted carbocyclisation of
 amideoxyhex-5-enopyranosides,
 6589
- promoted cyclisation of ortho-
 substituted aryl allyl ethers,
 synthesis of benzofurans, 4687
- vinyl-, species, hydride ion
 capture, tandem cyclisation-anion
 capture, 4325
- Penicillins**
 acylase of-, use in selective N-
 terminal deprotection in peptide
 synthesis, 1131
- benzyl-, chemistry, use of
 phenylacetoxyethylene,
 carboxyl protecting group
 removable with immobilised
 penicillin acylase, 4623
- sulphoxide of-, loss of β -lactam
 ring during rearrangement, 3179
- Peptides and polypeptides**
 aminopeptidase B from Ehrlich
 ascites carcinoma cells, total
 synthesis of natural inhibitor
 OF4949-III, 3227
- aminopeptidase B inhibitor, total
 synthesis of OF4949-111, 559
- carbonyl-modified-, and amino
 acids, synthesis of mono-
 functionalised enamines and
 methyl ketone derivs from
 thioamides via episulphides and
 thioiminium salts, 2295
- carboxyl-modified-, and amino
 acids, synthesis of difunction-
 alised enamines from thioamides
 via thioiminium salts, 2299
- cobalt-carbonyl complexes of-, as
 IR markers, 5649
- conjugates of-, and preferred
 conformation of (2S,5S,8S,11S)-
 1-acetyl-1,4-diaza-3-keto-5-
 carboxy-10-thia-

- tricyclo[2.8.0',¹]tridecane, studies of templates and α -helix formation, 4931
- cyclic-, fenestins A and B and known diketopiperazine cyclo-(L-Pro-L-Val), isolation from *Leucophloeus fenestrata*, 5489
- cyclic-, toxin cyanogenosin-RR from *Microcystis aeruginosa*, structure, 11
- cyclodepsi-, jaspamide and geodiamolide A and B, syntheses and synthesis of (2S,4E,6R,8S)-8-hydroxy-2,4,6-trimethyl-4-nonenic acid, 1269
- didemnins, 23-membered peptidole ring formation, 3057
- didemnins, 8-keto ester units, synthesis using 2,2'-carbonyl-bis(3,5-dioxo-4-methyl-1,2,4-oxadiazolidine), 2661
- dipeptide ketomethylene analogs, simple versatile synthesis, 1577
- dipeptides, selective modification of glycine residues, 1565
- fragments of-, protected, simultaneous multiple synthesis on 'allyl'-functionalised cellulose disc supports, 5871
- functionalised diacylamino-epidolidiones, synthesis as templates for β -sheet formation, 5079
- functionalised diacylamino-epidolidiones, conformational analysis, ¹H NMR evidence for β -sheet formation, 5077
- immunosuppressive agent cyclosporin A, studies of cyclophilin binding domain of CSA, 6577
- isopeptide bond, enzymatic formation involving ϵ -amino group of lysine, 5487
- lanthiopeptin, new and effective against *Herpes simplex* virus, structure and comparison with RO 09-098 and immunopotentiating peptide, 4771
- LEU-ASP *trans* C=C bond isostere of CCK-, alternate synthesis, 4041
- mixed peptide-polypropionate based cyclodepsiptide (+)-geodiamolide B, total synthesis, 4225
- new dipeptide isosteres, synthesis of α' , β -diamino- α,α -difluoroketones, 3687
- new immunomodulating-, isolated from a fungus, structure and synthesis of FR900490, 5147
- O-phosphotyrosine-containing-, synthesis using modern deprotection, 3591
- organometallic derivs of-, application to peptide receptor analysis, 5759
- part of jaspamide, cyclodepsiptide from marine sponge, synthesis, 6465
- peptidic trifluoromethyl alcohols and ketones, synthesis and application as renin inhibitors, 4665
- photoaffinity labelled optically active retinal derivs, synthesis, 2275
- prolyl-proline-derived peptide-functionalised templates for α -helix formation, synthesis from (2S,5S,8S,11S)-1-acetyl-1,4-diaz-3-keto-5-carboxy-10-thia-tricyclo[2.8.0',¹]tridecane, 4935
- pseudodi-, a pseudotri-, and pseudopenta-, enkephalin analogs, 2-imidazole ring incorporated as amide bond replacement, 3853
- renin inhibitors, synthesis, application of new diastereo-selective synthesis of chiral γ (aminoalkyl)- α -hydroxy- γ -lactones, 3923
- serine containing-, 'phosphite-triester' phosphorylation via di-t-butyl N,N-diethylphosphoramidite and dibenzyl N,N-diethylphosphoramidite reagents, 2369
- stage specific embryonic antigen-3 (SSEA-3), globopentaosyl ceramide, use of 2,4,6-trimethylbenzoyl group as a stereocontrolling auxiliary in total synthesis, 5681
- synthesis via a combination of solid phase and solution methods, new acid labile anchor group for solid-phase synthesis of fully protected fragments, 4005
- synthesis via a combination of solid-phase and solution methods, synthesis of fully protected peptide fragments on 2-methoxy-4-alkoxy-benzyl alcohol resin, 4009
- synthesis, application of N^G-(2,2,5,7,8-pentamethylchroman-6-sulphonyl) deriv of FMOC-arginine, 4341
- synthesis, selective N-terminal deprotection, use of penicillin acylase, 1131
- synthesis, t-butyl based protecting groups, deprotection with chlorotrimethylsilane-phenol reagent, 303
- tri-, one-pot synthesis from three single amino acid derivs catalysed by papain, 2907
- uteroglobin-like-, cavities, synthesis of antiparallel and parallel dimers of bis-cysteine peptides, 3845
- Peracids**
oxidation of isoxazolines, route to β -hydroxy ketones and acylated diols, 6703
- Perfumes**
ambergris fragrance chemicals from sclareol, synthesis involving Pd-catalysed key steps, 1017
- new route to zizaane, synthesis of (\pm)-isokhusimone, 4369
- phenylacetaldehyde, selective synthesis, 1471
- Peroxides**
cumyl hydro-, oxidative desulphurisation at pentaavalent P catalysed by metalloporphyrins, 1827
- metal(VI)oxide di-, oxidation of enol ethers, 3145
- oxazole endo-, thermal rearrangements, fragmentations and methanol additions, 1007
- oxazole endo-, via [4+2] cycloaddition of singlet oxygen to oxazoles, 1003
- prostaglandin endo-, model compd, electrophile-initiated conversion into thromboxane B skeleton, 4595
- t-butyl hydro-, and a molybdenum oxide chelate, marked effect of catalytic amount of an amine in selective epoxidation of aliphatic and aromatic olefins, 2843
- t-butyl hydro-, oxidation of alkynes to conjugated acetylenic ketones catalysed by CrO₃, 2321
- triarylmethyl-, and α - and β -naphthylidiphenylmethyl peroxide, photo-reactions, 3029
- unique hydro-, included in new marine diterpenoids from coral of genus *Pseudopterogorgia*, 4361
- Pharmacologically active compounds**
1,4-thiazanes, conformationally restricted analogs of peptido-leukotrienes, 6533
- 1-methoxycanthine-6-one, synthesis, 2421
- 1-[2',5'-dimethoxy-4'-(β -fluoroethylphenyl)-2-amino]propane; studies related to ¹²⁵I-labelled serotonin receptor ligands, 6537
- 3-acylcarbazoles, synthesis and further elaboration into 6H-pyridocarbazoles, 6505
- 3'-C-cyano-3'-deoxythymidine, synthesis, 941
- 3'-cyano-3'-deoxythymidine, short synthesis, 2995
- [4.3.0]pyrazoliginones, potential antibacterial agents, 6569
- 5'-O-trityl-3'-keto-2'-deoxythymidine, direct conversion to 1-(2-deoxy-3-methyl-beta-D-xylosyl)thymine, 3769
- 5-vinyl- and 5-ethyl-2'-deoxyuridine-5'-triphosphates, synthesis, 4525
- 6-alkyl-2-methoxy-4-(3H)-pyrimidinones, regioselective prep, antitumor and antimicrobial activity of 4-O-acylated pyrimidine derivs, new agents for selective acylation of amines, 2741
- 11-nortetrodotoxin-6(R)-ol and other tetrodotoxin derivs isolation from *Fugu niphobes*, 4127
- 13,13-difluoro-leukotriene B₂, prep, 5665
- 28,29-bisnorkijanolide, synthesis, 6951
- α -fluoromethyl-N-methyl-phenylsulphoximine, new fluoromethylation reagent, 3305
- alkaloid CC-1065, related cyclopropane chemistry, 2167
- alkyl and aryl substituted N-(aminoalkylacetyl)sulphonamides, prep, 1653
- anti-hypertensive indoreenate, synthesis, 2825
- antihypertensive pyrrolidines, asymmetric synthesis, methyl-pyrroglutamate as chiral synthon, 3259
- antileukemic lactone, synthesis of racemic eriolanin, 3829
- antiviral acynucleoside 9-(3-hydroxypropoxy)guanine, synthesis, 701
- antiviral acynucleosides, synthesis of 9-(hydroxy-alkylamino)guanines, 5995
- aphidicolin, synthesis from its degradation product, 3,18-isopropylidenedioxy-17-noraphidicolan-16-one, 2793
- aromatic yohimboid and protoberberine alkaloids via intramolecular Diels-Alder reactions, 6725
- asymmetric synthesis, entry into tricyclic nitro ergoline synthon, 4543
- avermectin B₁, chemical degradation, 3163
- AZT analogs, synthesis and biological evaluation against HIV, 3211
- benzopyrano[4,3-b]pyridines, benzothiohyprano[4,3-b]pyridines and pyrido[3,2-b][1,4]benzothiazines, synthesis, 2703
- bruceantin, synthesis of precursor 15-deoxybruceolide, 5953
- camptothecin, chemical

- rearrangement to mappicine ketone, 6847
- (-)-carba-2',3'-dideoxythymidine and (-)-carba-2',3'-dideoxy-3'-fluorothymidine, prep from (±)-endo-5-norbornen-2-ol using enzymatic and chemical synthesis, 5745
- (-)-carbocyclic 2',3'-dideoxythymidine a potential anti-aids agent, stereospecific synthesis, 2681
- didemnin A, B, C and proyldidemnin A, synthesis, 4407
- dihematoporphyrin ether and related porphyrin dimers, synthesis, 2501
- dinucleoside phosphorodithioates, synthesis and characterisation, 2911
- diterpenoid (+)-taxodione, synthesis from (-)-abiatic acid, 5751
- diterpenoid oxepans, zoapatanol synthesis, 2867
- ethynylazaspirocycloundecene, synthesis, approach to side-chain of unsaturated histrionicotoxins, 2989
- evidistomin K sulphoxide, antiviral from *Ritterella sigillinoides*, 2255
- forskolin, total synthesis, enantioselective route to key intermediate, 6409
- (±)-fluorobotryodiplodin, stereospecific synthesis, 2325
- furanoid bisnorditerpenoid, malabarolide from *Tinospora malabarica*, 4241
- gelsamine, synthetic study, new synthesis of highly functionalised cis-hydroisoquinolines, 3781
- gelsamine, synthetic study, prep of advanced pentacyclic intermediate, 3785
- ginkgolide A, total synthesis, 3205
- ginkgolide B, total synthesis, enantioselective route to key intermediate, 3201
- hydroxy amino acid moiety of Al-77-B, a gastroprotective compd from *Bacillus pumilus*, 6331
- imidazo[4,5-e]pyrazoles, new synthesis, 6171
- immunosuppressive agent cyclosporin A, studies of cyclophilin binding domain of CsA, 6577
- L-gulonolactone, synthesis of D-deoxymannojirimycin and D-mannonolactone; D-gulonolactone, synthesis of L-deoxymannojirimycin and L-mannonolactone, 2871
- lantniopentin, new and effective against *Herpes simplex* virus, structure and comparison with Or-09-098 and immunopotentiating peptide, 4771
- (±)-lysergic acid, concise Pd-catalysed approach, 3117
- mexiprostil, highly convergent synthesis of 16(R) 16-methoxy 16-methyl PGE, methyl ester, 6769
- mixed peptide-polypropionate based cyclodepsipeptide (+)-geodiamolide B, total synthesis, 4225
- Murrayella periclados*, isolation of 12-(S)-Hepe, revised structure of acyclic iicosanoid from *Laurencia hybrid* and biosynthesis of marine prostanoid hybridolactone, 2015
- (±)-N-acetyllochlinol, total synthesis, 4839
- new tetracyclic system related to aptazapine, synthesis by one-pot double annelation, 6471
- prostacyclin analogs stabilised by acceptor substituents at 5-position, 4285
- psoralen, synthesis of new analog built on benzodioxinic moiety using as key intermediate 6-hydroxy-7-formyl-1,4-benzodioxan, 2665
- (R)-carnitine, symmetric synthesis via hydrogenation of ethyl 4-chloro-3-oxobutanoate, 1555
- S-cysteinylnyl, S(N-acetylcysteinylnyl) and S-glutathionyl conjugates of N-hydroxymethyltriazenes, synthesis, 2707
- (+)-sesbanamide, synthesis from D-glucose, 3095
- (+)-sesbanamide, synthesis from D-glucose, 3095
- statine analogs, asymmetric synthesis, 2307
- tetraoxacyclic squalenoid venustatriol, total synthesis, 3171
- threo and erythro β -phenylserines, new asymmetric synthesis using (+)-ketopinic acid as chiral auxiliary, 2067
- trans- and cis- α -(carboxycyclopropyl)glycines, synthesis as L-glutamate analogues, neurobiological activity, 1181
- tricyclic nitro ergoline synthon, asymmetric synthesis, 3667
- trioxilin B, synthesis, 4237
- tsukubaenolide, synthesis of C(1)-C(15) segment, 4481
- Phase transfer catalysis and catalysts**
and cobalt carbonyl catalysis of vinyl epoxides to unsaturated hydroxy acids, 1763
chiral-, use in asymmetric synthesis of α -hydroxy ketones, 2835
- Phenols**
3-arylcatechols, synthesis, new aromatisation of 1,2-cyclohexanediones, 73
bromoketone phenol rearrangement, 5099
C-glycosidation with glycosyl fluoride under Lewis acid conditions, rearrangement of O-glycoside to C-glycoside, 6935
chlorination with N-chloro-dialkylamines in presence of silica, 1319
effect of sulphur dioxide on Mannich reactions, 5801
optically active disparlure, short synthesis, prep of optically active 1-chloroalkyl p-tolylsulphoxides, 3137
p-n-alkylphenol-formaldehyde condensation, prep of calix[6]arenes and p-n-alkylcalix[8]arenes, 2659
phenoxide and naphthoxide ions as nucleophiles, Spyl reactions for synthesis of biphenyl and phenyl-naphthyl derivs, 1289
selected-, two-phase nitration, 2471
substituted veratroles, fluorination via regioselective mercuration, 1501
via enynes, 6873
- Pheromones**
 β -necrodol, synthesis via Pd-catalysed reductive enyne cyclisation, 1231
(±)-actinidine, total synthesis by application of photoreductive cyclisation, 6113
ceruberonic acid III, construction of tetracyclic nucleus by oxyanionic Cope chemistry, 273
chiral-, epoxides, stereoselective synthesis via alkylation epoxide rearrangement, 865
dienic insect-, via access to ω -hydroxy alkenyl iodides by hydroalumination of ω -terbutoxy alkynes, 6243
Lobesia botrana and *Bombyx mori*, new synthesis, 217
macrolide insect-, synthesis of ferrulactone, 6947
(+)-monomrine, enantioselective total synthesis, 5767
perilnane-B, approach via intramolecular Diels-Alder reaction with furan-diene and allene-dienophile, 6501
pure trans-, from acylsilane/ylide chemistry, stereoselective synthesis of E-11-hexadecen-1-ol acetate, 2777
sex-, of Gypsy moth, enzymatic resolution of 2,3-epoxyalcohols as intermediates in synthesis, 2455
suspensolide, new macrolide component of male *Anastrepha suspensa*, 6561
suspensolide, total synthesis and structure, 6565
synthesis of-, protected and deprotected alcohols as t-butyl ethers, 2951
- Phosphalkenes**
1-phosphabutadiene, masked, 1,2-dihydrophosphete ring reacts to give [4+2] cycloadducts with N-phenylmaleimide, dimethyl acetylene-dicarboxylate and benzaldehyde, 3077
1-phosphahexatrienes, spontaneous cyclisation into 1,2-dihydrophosphinines, 4289
[3+2] and [4+2] cycloadditions, prep of 1,2,4A'-thia-azaphosphole, 1,2A',4A'-thiadiphosphole and 1,2A'-thiaphosphole, 4535
4-hydroxy-1-phospha-1,2-butadienes and 1-phosphabutatrienes, formation, 2935
diphospha- and monophospha-butenes via prototropic rearrangement of oxalic acid diphosphide and monophosphide, 607
- Phosphalkynes**
homo-Diels-Alder and ene reactions, 1681
t-butylphosphaethyne, reaction with 1,2,4,5-tetrazinedi-carboxylate to give 1,2A',3A'-azadiphosphole, 5867
- Phosphaallenes and phosphazenes**
1,3-diphospha-, cyclisation, formation of 1,2,3,4-tetrahydro-1-phosphanaphthalene, 333
3H-phosphaallene - alkynyl-1H-phosphane tautomerism, 463
- Phosphazenes**
phospha- λ^3 -azenes, synthesis of 2-aza-1,3-dienes, 4863
- Phosphanes**
bis- and tris(diazomethyl)-, new building blocks for synthesis of P-heterocycles, 925
- Phosphates**
allyl-, and allyl acetates, Pd-catalysed carbonylation, selective synthesis of β,γ -unsaturated esters, 4945
chemistry of-, Pd-catalysed selective deprotection of allyl and allylcarbonyl groups in

- presence of propargyl and propargyloxy carbonyl and propargyloxy carbonyl groups, 623
- DL-*myo*-inositol 1,2-cyclic-, thiophosphate analogs, synthesis, 3919
- DL-*myo*-inositol 1-, and its thiophosphate analog, synthesis, 3921
- inositol-, and 1,2-cyclic-4,5-, 1,4,5- and 2,4,5-triphosphates, synthesis via D-4,5-bis(dibenzyl phosphoryl)-*myo*-inositol deriv., 5259
- reactive-, cleavage with polymer-bound iodosobenzoate reagents, 2433
- regiospecific catalysed tandem cyclisation-anion capture processes, stereospecific group transfer from organotin reagents, 5565
- undecaprenyl di-, synthetase, behaviour towards artificial substrate, formation of (S)-4-methyl deriv of Z,E,E-geranylgeranyl diphosphate, 3807
- Phosphetanes**
2-fluoro-1,2 λ^5 -oxa-, via addition of P-fluoro-ylides to aldehydes and ketones and their conversion into allylphosphonates or vinylphosphonates depending on substituent at C-3 and C-4, 3663
new synthesis via insertion of electrophilic P into cyclopropanes, 1219
- Phosphetes**
1,2-dihydro-, as masked 1-phosphabutadienes, 3077
- Phosphine oxides**
C-C formation, new method promoted by tri-n-butylphosphine and Zn, 6119
tetraoxides, unsaturated macrocyclic, via cycloaddition of two dioxosphosphidure dianions with two mols of unsaturated dialhale, 6247
vinyl-, conjugate addition in aqueous medium, 937
- Phosphines**
Co(II)chloride bistrisphenyl-, alkylations of β -dicarbonyl compds, 1469
- Phosphinic acid and derivatives**
1,2-dihydrophosphinines via spontaneous cyclisation of 1-phosphahexatrienes, 4289
allylic phosphinimines and sulphilimines, contrasting thermal reactions, 5353
N-phosphinoyl and N-sulphonyl imines, direct prep via aromatic aldehydes, 3725
phosphinites from Cinchona alkaloids, prep and their use in Rh-catalysed enantioselective hydrosilylation of ketones, 3235
- Phosphiranes**
spiranic azadiphosphiranium cation, synthesis and entry to diazadiphosphetidine system, 4547
- Phosphirenones**
 λ^3 -, and λ^5 -, new route via [n+1] cycloaddition of an iminophosphane, 605
- Phosphites**
coupling of-, prep of phospholipids, 3631
- trialkyl-, and alkyl halide, new addition to nitrene, prep of N-substituted 1-(alkoxyamino)alkylphosphonates, 663
- Phospholenes**
 λ^3 -, and λ^5 -, new route via [n+1] cycloaddition of an iminophosphane, 605
- Phospholes**
2-amino-1-phenyl-, prep from enamines and dichlorophenylphosphine, 4581
3-hydroxy-1,2,4 λ^3 -diazole-, 4-hydroxy-1,3 λ^3 -azaarsole, and 3-hydroxy-1,2,4 λ^3 -dozaarsole, exist in phenolic OH-form, 3387
- Phospholipids**
1,2-dipalmitoyl-sn-glycer-3-yl-D-*myo*-inositol 1-phosphate, synthesis, 6013
1-thiohexadecyl-2-acylamino-glycerophosphocholines, prep, new approach to synthesis of thioether analogs, check31
platelet activating factor and its enantiomer, enantioselective synthesis via ring opening of glycidyl tosylate with 1-hexadecanol, 4393
prep, general protocol via phosphite coupling, 3631
- Phosphonic acid and derivatives**
2-aminoethyl-, and its methyl substituted derivs and primary OH group of β -D-galactopyranoside, formation of an ester bond, 1199
5'-aminoalkylphosphonate containing oligodeoxyribonucleotides, synthesis, 5537
allylphosphonates or vinylphosphonates via conversion of 2-fluoro-oxaphosphetanes (depending on substituent at C-3 and C-4) and obtained by addition of P-fluoro-ylides to aldehydes, 3663
arylmethylphosphonates via aryl bromides, 1513
chiral phosphonoacetates, E- or Z-selective Horner-Wittig reaction with substituted bicyclo[3.3.0]octane-3-ones, 1775
cyclopropyl phosphonates, improved prep and their application in arylidene cyclopropane formation, 5033
deoxyribonucleoside 3'-hydrogenphosphonates, synthesis, 1037
H-phosphonate method, large-scale synthesis of oligonucleotide, 2619
N-substituted 1-(alkoxyamino)-alkylphosphonates via new addition of trialkyl phosphite and alkyl halide to nitrene, 663
phosphonate and phosphorane synthons, synthesis of 4-substituted vinyl glycines, 3361
- Phosphonium salts**
amino-, and amines via reaction of lithiated aza-ylide with alkyl and acyl halides, 3931
vinyl-, new synthesis, application for deuterium labelling, 4577
- Phosphorothioates**
nucleoside 3'-O(S-alkyl) and nucleoside 3'-O(S-aryl) methylphosphorothioates, synthesis and P-diastereomeric resolution, 1227
- Phosphorylation**
2'-deoxy-5,6-dihydro-5-azacytidine-, synthesis and application to synthesis of DNA containing dihydro-5-aza- and 5-azacytosine bases, 1767
a modified thymidine phosphoramidite, synthesis, 5221
adenosine-, and N-phenoxy-acetylated guanosine in solid phase synthesis of ribozyme sequence, 4249
approach via-, using 5'-levulinyl and 2'-tetrahydrofuranlyl protection in synthesis of oligoribonucleotides, 5383
di-t-butyl N,N-diethyl-, and dibenzyl N,N-diethyl- reagents, 'phosphate-triester' phosphorylation of serine containing peptides, 2369
glyceronucleoside-, synthons, use and prep in solid phase synthesis of acyclic oligoribonucleotides, 4831
intermediates of-, in synthesis of DNA fragments use of 1,1,1,3,3,3-hexafluoro-2-propyl protecting group, 81
N,N-diisopropyl dibenzyl-, reagent, synthesis of *myo*-inositol phosphates, 979
- Phosphoramidates**
and phosphonate synthons as intermediates in synthesis of 4-substituted vinyl glycines, 3361
imino-, aza-Wittig reaction with isocyanates, prep of conjugated carbodiimides and their ring closure to 2-aminopyridine derivs, 379
imino-, aza-Wittig reaction with isocyanides, CO, or CS₂ to give functionalised 4(3H)-quinazolinones and benzimidazol[1,2-c]quinazolines, 3849
intermediates in hydrolysis of acyclic and 6-ring thiophosphate esters, 2081
- Phosphoranes**
[2-(trimethylsilyl)ethylidene]-tris(2-methylphenyl)phosphorane, use in stereoselective synthesis of 2-allyltrimethylsilanes, 5965
carbomethoxymethylene triphenyl-, treatment of azoalkenes, prep of α -olefinated carbonyl derivs, 5787
- Phosphoranylation**
meta-, generation of ester and amide derivs via photolysis of 2,3-oxaphabicyclo[2.2.2]oct-5-ene derivs, 2627
- Phosphorothioic acids**
dinucleoside phosphorodithioates, synthesis and characterisation, 2911
dinucleoside phosphorodithioates, synthesis via thioamides, 5517
nucleoside-3',5'-cyclic phosphorothioates by cyclothiophosphorylation of unprotected nucleosides, 2803
- Phosphorus compounds**
bis- and tris(diazomethyl)-phosphanes, new building blocks for synthesis of P-heterocycles, 925
C-symmetric phospho[2.2.2]-cyclophane, synthesis, 5101
cumyl hydroperoxide, oxidative desulphurisation at penta-covalent P catalysed by metalloporphyrins, 1827
diphasphatocyclophosphorane

- oxalic acid diphosphide and monophosphide, 607
- nucleophiles of-, reaction with aldehydes, route to 3-substituted-2-phosphomethyl acrylates, 5201
- phosphorous diesters, reaction with alcohols, trans-esterification in presence of titanium, 3327
- Phosphorus halogen compounds**
- chloro-N,N-diisopropylamino-methoxyphosphine, intermediate for synthesis of nucleoside phosphorodithioates, 6843
- deoxynucleoside phosphorofluoridates, synthesis, 3301
- dialkylphosphonofluoroacetyl chlorides introduction of 2-oxophosphonate 1-fluorinated synthons on organometallic reagents, 2655
- dibenzyl phosphorofluoridate, new phosphorylating reagent, 5763
- dichlorophenylphosphine and enamines, prep of 2-amino-1-phenylphospholes, 4581
- dichlorophosphate or phosphorus oxychloride, activated dimethylsulphoxide, use in synthesis of β -chloroalkyl sulphides, 5467
- nitrosonium hexafluorophosphate in acetonitrile reaction with olefins with aryl group at olefinic C atom afforded 4H-5,6-dihydro-1,2-oxazines with two aryl groups at C-4 and C-6, 4437
- phenyl dichlorophosphate as activating agent in Pfizner-Moffat oxidation, 3167
- Phosphorylation**
- α -phosphorylated α -amino acids, synthesis, 4465
- new phosphorylating reagent, dibenzyl phosphorofluoridate, 5763
- phosphorylation-dephosphorylation processes, N-diisopropyl-oxyphosphoryl-serine and theonine in alcoholic media, participation of NH_2 , OH and COOH groups, 1145
- 'phosphate-triester', of serine containing peptides via di-*t*-butyl N,N-diethylphosphoramidite and dibenzyl N,N-diethylphosphoramidite reagents, 2369
- Phosphotriesters**
- approach to synthesis of oligonucleotides, use of cellulose acetate deriv as polymer support, 647
- Photochemistry**
- 1,2,3,4-tetrahydro-1,6-naphthridines and 1,2,3,4-terhydroquinolines by direct lithiation, 5725
- [4+2] cycloaddition of singlet oxygen to oxazoles, formation of oxazole endoperoxides, 1003
- activation and synthesis of 3-aryol-2-(2-furyl)-chromones, functionalised, 69
- addition of alkenes and alcohols to sodium phthalimide, 1071
- and kinetics of ylids from reaction of *p*-substituted phenylchlorocarbenes with acetone, 3419
- and photophysics, of *p*-benzoyl-phenyldiphenylmethyl in soln, 5109
- and thermal rearrangement of diazo-2-trimethylsilyl-2-sila-3,5-cyclohexadienes with silabenzene and silafulvene as intermediates, 467
- asymmetric inductions in mixed additions employing α,β -unsaturated homochiral ketals, 2613
- benzocyclobutene, 2543
- carbonyl and nitrile ylides, heats of formation by acoustic calorimetry, 2623
- carbonylation of alkyl iodides in presence of metal carbonyls, 3833
- chemistry of constrained non-conjugated arene-ethene bichromophoric systems, 4319
- cyclisation of norbornadienes fused with quinone units, isomerisation to quadricyclanes, 1405
- cyclisation, Lewis acid promoted, of arylimines directed towards synthesis of pentacyclic natural products, 5213
- cycloaddition of generated phenylcyclopropane radical cation to N-methylnaphthylimide radical anion, mechanism, 513
- decarbonylation of 2,4-diphenyltetracyclo[3.3.2.0^{1,4}.0^{2,3}.0^{5,6}]deca-9-ene-6,8-dione, generated constrained cyclopropylidene diradical, new skeletal rearrangements, 5933
- decarboxylative chlorination of carboxylic acids and their benzophenone oxime esters, 6287
- di- π -methane rearrangement of dibenzobarrelene diesters in solid state, greatly altered regioselectivity, 2041
- Diels-Alder addition of N-methyltriazolidinedione to phenanthrene, 5509
- electrocyclic or thermal rearrangement of α -vinyl imidates under non-acidic conditions, synthesis of substituted quinolines, 3517
- fragmentation of 4-alkylpyrimidines and 2-alkylquinolines, 6853
- functionalised 3-aryol-1-2-(2-furyl)-chromones, synthesis and photoactivation, 69
- furan-carbonyl cycloaddition, use of unsymmetrically substituted furans, synthesis of a kadsurenone-ginkgolide hybrid, 6689
- intermolecular [2+2] cycloadditions of 2,5-cyclohexadiene-1-ones to alkenes, 6881
- intramolecular cyclisation of ω,ω -bis(*p*-vinylphenyl)alkanes, mechanism, 5375
- intramolecular [2+2] cycloaddition approach to [7]-prismane analogs, 1613
- irradiation of electro donor-acceptor complex, unusual cycloaddition of cage ketone with tetracyanoethylene 5779
- irradiation of inclusion complexes of pyridones and optically active host compds, enantioselective conversion into β -lactam derivs, 4299
- isomerisation of trithiazoles, high selectivity 3963
- N-debenzylation initiated by sensitised electron transfer, convenient and mild approach, 4157
- o*-nitrobenzyl-quenched fluorescent carbamates, 65
- photolysis of 2,3-oxaphosphabicyclo[2.2.2]oct-5-ene derivs, generation of ester and amide derivs of metaphosphoric acid, 2627
- photolysis of 4-substituted-4-hydroxy-3-cyclobuten-1-ones, new route to butenolides from 4-hydroxycyclobutenones, 3529
- photolysis of bridged cyclohexenediones and vinylcyclohexanediones, no formation of ethylenedione, 6641
- photolysis of N,N-dimethyl-2,2-diphenylethylamine in MeOH, C-C bond heterolytic cleavage, 431
- physical and chemical properties of [n.1]-metacyclophanenylidenes, 4377
- radical alkyl-nitroalkylanion cross coupling, cobaloxime mediated, 6545
- reactions of 8-membered ring di- and trienones in a crystalline inclusion complex with optically active 1,6-di(*o*-chlorophenyl)-1,6-diphenylhexa-2,4-diyne-1,6-diol, 653
- reactions of triarylmethyl peroxides and α - and β -naphthylidiphenylmethyl peroxide, 3029
- reactivity of airodienone prepared via oxidation of bis(2-hydroxy-3,5-di-*t*-butylphenyl)methanone, 5673
- rearrangement of 4-alkyl-4-alkoxy-2,5-cyclohexadienones, synthesis of 4-(alkyldimethoxy methyl)cyclopent-2-en-1-ones, 1103
- rearrangement of 8-oxabicyclo[3.2.1]oct-6-en-2-ones, 6889
- rearrangement of quinone monoketals, synthesis of substituted cyclopentenones, 163
- rearrangements of pyranocarbazole alkaloids, 6625
- reductive cyclisation, application to total synthesis of (\pm)-actinidine, 6113
- regioselective isomerisation of pentaenals, effect of Me substituents, 853
- sensitised oxidative reaction, selective generation of iminium cation, 4153
- sensitised oxygenation of 2,3-dihydropyrazines, synthesis of isonitriles, 1127
- solid state cyclisation of 2,4,6-trisopropylbenzophenones, 3087
- solid state rearrangement, of 2,5-cyclohexadienones, 3091
- stimulated reaction of aryl iodides with 2-naphthoxide ions by $\text{S}_{\text{RN}}1$ mechanism, 3429
- substituent effects on *o*-tolualdehydes, 5559
- trans-cis isomerisation of meta-(phenylazo)azobenzenes, 563
- triplex-catalysed Diels-Alder and [2+2] cycloaddition reactions of enol ethers and ketene acetals, 5125
- UV-laser-, generation of triplet spiro[2.6]nona-4,7-diyldiradical by N-extrusion from azoalkane 6,7-diazaspiro[bicyclo(3.2.2)non-6-ene-2,1'-cyclopropane]; conformational influence of lifetime of a 1,4-cycloheptadiyl as determined by cyclopropylcarbonyl "free radical clock", 5637
- UV-laser-, nitrogen extrusion from 4,5-diazatricyclo-[4.4.0.0^{1,4}]dec-4-ene; lifetime determination of bicyclo[2.2.2]octa-2,5-diyld by dioxygen trapping, 6605
- valence isomerisation of anthraquinone derivs, 2211
- vitamin B-12 electrocatalysed addition of alkyl bromides and

- carboxylic anhydrides to methyl 2-acetamidoacrylate yields 2-amino esters, 1601
- Photoelectron spectra**
and X-ray analysis of *cis* trialkyl-triaziridines, 185
VTPES and FVP MIT, detection of 2,5-dimethylene-2,5-dihydrothiophene and thiophenoradialene, 6239
- Photophysics**
and photochemistry of *p*-benzoylphenyldiphenylmethyl, in soln, 5109
- Physical studies**
and synthesis of bis(dioxo-thiacyclopenta)-tetrathiafulvalene, 3467
carbonyl and nitrile ylides, heats of formation by photoacoustic calorimetry, 2623
high pressure interconversion of previtamin D₂ and vitamin D₂, 3021
- Phytoalexins**
sulphur containing-, brassilexin from *Brassica juncea*, 6447
- Pigments**
antibacterial-, from *Dendrilla membranosa* confirmed as 4,5,8-trihydroxyquinoline-2-carboxylic acid, 2137
bilinubin *exo*-vinyl *N*-acetyl-L-cysteine adducts, CD, amplification of optical activity by remote chiral functionality, 3507
fungus-, of grevillin and pulvinone types from benzylacetylins, synthesis, 2085
plasmodial-, fuligorubin A, total synthesis, use of 4-diethylphosphone-3-oxobutane-thioate for tetramic synthesis, 5829
triterpene anhydride of celastrene, structure of celastranhydride, 109
triterpene quinone-methides, two new compds from *Cassine balaie*, revised structure of balaenonol, 387
- Piperidines**
2-alkyl-Δ⁴-, synthesis via addition of alkylzinc iodides to 1-(phenoxycarbonyl)2,3-dihydropyridinium salts, 6711
and pyridines, new synthesis, [3+3] annulation of 2-azaallyl anions, 4819
derivs, highly functionalised via acetal-initiated cyclisation of allylsilanes, 3247
N-methyl-2,3-*cis*-disubstituted-, stereoselective route, 3993
substituted, formation via rearrangement of imine-epoxide, stereoselective synthesis of (+)-solenopsin A, 4977
- Piperidones**
N-methyl-4-, and 3-quinuclidinone, stereocontrolled synthesis of spirocyclic lactones and ethers by phenylthio migration, 5321
substituted-, regio- and stereoselective synthesis, 5115
- Plants**
biosynthesis of mugineic acid and 2'-deoxymugineic acid in *Hordeum vulgare*, phytosiderophore study, 1053
- Platinum and compounds**
bis(diphenylphosphino)-methane complexes, catalysis of C-S bond formation, 4477
- Polyamines**
argiotoxins 636,659 and 673 total synthesis, 6223
new synthesis via reaction of dichloroboranes with azides, 1279
- Polycyclic alicyclic compounds**
acylnorbomadiene via cycloreversion of acylquadri-cyclane promoted by metal oxides, 4109
anti-sesquinorbomene, ground-state of double bond either pyramidal with low barrier to inversion or planar based on ¹³C NMR and theoretical results, 19
anti-tricyclo[8.6.0.0^{2,7}]hexadeca-7,11-diene-3,16-dione, prep via cycloocta-2,4-diene-1-dione, 653
diethyl 3,6-dioxopentacyclo-[6.5.0.0^{1,2}.0^{3,6}.1^{0,9}.1^{1,10}]tridecane-2,7-dicarboxylate, reaction with *o*-aminobenzaldehyde, formation of 2,3:6,7-bis(2',3'-quinolino)pentacyclo[6.5.0.0^{1,2}.0^{3,6}.1^{0,9}.1^{1,10}]tridecane, 6681
dispiro[3.0.4.2]undecane synthesis and rearrangement to (+)-modhephene and (±)-isocomene under kinetic or thermodynamic control, 5525
dispiro[3.0.4.2]undecanes, synthesis and rearrangement to [3.3.3]propellanes, synthesis of (±)-modhephene, 1263
dodecahedrane, design of precursor all *cis*-C₂₂-hexaquinane, 3607
dodecahedrane, new approach, short simple design of quinane 'roofed' poluquinanes, 5309
polyoxygenated decalin with limonoid structural homology common to salarin and azadirachtin, synthesis, 1853
polyquinenes, approach to synthesis, prep of centro-substituted triquinacene, 2535
quadricyclane, valence isomerisation to norbornadiene, dimethyldioxirane catalysed, 15
syn-sesquinorbomatriene, alkylidene derivs, ¹³C NMR and theoretical analysis of homoconjugative orbital interactions, 4213
taxol skeleton, saturated C-ring approach, 1367
triquinane derivs, angular annulated, synthesis via intramolecular [2+2] cyclo-additions of ketenes and vinylketenes to olefins, 2303
triquinane derivs, linear annulated, synthesis via intramolecular [2+2] cycloadditions of vinyl ketenes to olefins, 459
- Polycyclic aromatic compounds**
1,11-*O*-benzeno[2]ortho-cyclo[2](4,5)troponophanes, synthesis and structure, 5961
1,2,3-triphenylbenzopentalene, formation by pyrolysis of tetraphenylphthalic anhydride, 6791
1-bromo-7-chloropentacyclo-[5.2.0.0^{2,4}.0^{3,6}.0^{5,8}]nonane, reaction with *t*-BuLi; evidence for 1(7)-homoebene, 5253
1-hydroxy- and 3-hydroxy-*trans*-7,8-dihydro-7,8-dihydroxy-benzo[a]pyrene, synthesis, 3513
1-methyltricyclo[2.2.2.0^{1,3}]octane-3,5-dione, synthesis and desymmetrisation, 269
(2*S*,5*S*,8*S*,11*S*)-1-acetyl-1,4-diaza-3-keto-5-carboxy-10-thia-tricyclo[2.8.0^{1,3}.0^{2,7}]tridecane, preferred conformation and peptide conjugates, studies of templates and α -helix formation, 4931
(2*S*,5*S*,8*S*,11*S*)-1-acetyl-1,4-diaza-3-keto-5-carboxy-10-thia-tricyclo[2.8.0^{1,3}.0^{2,7}]tridecane, synthesis of proyl-proline-derived peptide-functionalised templates for α -helix formation, 4935
2,4-diphenyltetracyclo-[3.3.2.0^{2,4}.0^{3,7}]deca-9-ene-6,8-dione, photodecarbonylation, generation of constrained cyclopropyldicarbonyl diradical, new skeletal rearrangements, 5933
2-(2,3-diphenylcyclopropen-1-yl)-8-tropolone, intramolecular Diels-Alder reaction with imverse electron demand, construction of semibullvalene-type carbon skeleton, 4123
3 α - and 5 α -hydroxytricyclo-[5.2.1.0^{1,3}.0^{2,4}]deca-dienes, substituted, [3,3] rearrangement, 4,4'-biphenanthryl core of new liquid crystals, 1797
6,7,8-trimethyltricyclo-[3.2.1.0^{1,3}.0^{2,4}]octanes, cycloreversion stereochemistry, reciprocal tests of steric opposition down-disrotatory thermal decyclisation of [3.2.1]propellanes, 4835
8-methyl-1,2-dihydrocyclobuta-[a]naphthalene-1,2-dione, pyrolysis, formation of acenaphthalene, ¹³C labelling study, 6861
8,8'-bis(bromomethyl)-1,1'-binaphthyl, reductive cyclisation, 1521
10,10'-dihydroxy-9,9'-biphenanthryl, new chiral host compd, optical resolution of propionic acid-, butyric acid- and 4-hydroxycyclopent-2-en-1-one derivs by complexation, 1807
14-*epi*-orinipellin skeleton, construction of functionalised C₂₂-tetraquinane carbon framework via cationic enone-olefin cyclisation, 5025
 ω , ω -bis(*p*-vinylphenyl)alkanes, mechanism of intramolecular photocyclisation, 5375
(-)-abiatic acid, synthesis of diterpenoid (+)-taxodione, 5751
acenaphthalene, thermal atomerisation, benzenoid ring contractions, 6857
ambergriis fragrance chemicals from sclareol, synthesis involving Pd-catalysed key steps, 1017
anthraquinone C-glycosides, prep via bifunctional reagent available from anthrarufin, 6909
anthraquinone derivs, photo valence isomerisation, 2211
arene-ethene bichromophoric systems, constrained non-conjugated, photochemistry, 4319
benzo[*c*]phenanthridone ring formation via synthesis of 2-(2-furyl)-cycloalkanes, 3243
bicyclic and polycyclic alkenes via Pd-catalysed intramolecular arylation and vinylation, 2919
binaphthyl derivs, unsymmetrical, via coupling of iodonaphthalenes with naphthoxide ions under SRN1 conditions, 1705
binaphthylidene cyclic silanes,

- optically pure, prep and use in reductions and aldol condensations to give highest ee's for chirality transfer with organosilanes, 6199
- biphenyl and phenyl naphthyl derivs, synthesis via Sp³l reactions, using phenoxide and naphthoxide ions as nucleophiles, 1289
- carbocyclic and carboxypolycyclic compds, synthesis via carbopalladation catalysed by Pd-phosphine complexes, 2915
- cyclopenta[*a*]phenanthrene and cardenogenic derivs, new synthesis, 3207
- dihydropyrene with internal F substituents, synthesis, *syn* to anti isomerisation of [2.2]metacyclophanes, two pathways depending on internal substituents, relative sizes of H and F substituents, 3287
- fluted [4] peristylane perimeter, extended functionalisation, 4069
- fused carbocyclic systems, stereospecific synthesis via Ireland reaction, 1371
- iminomethano-dibenzo[*a,e*]cyclooctenes, synthesis by transannular formation and cleavage of isoxazolidines, 6985
- manoalide and secmanoalide, synthesis via Pd-catalysed coupling of allylhalide with CO and 2-silyl-4-stannylfuran, 1173
- methyl 7-phenylidibenz[*a,j*]anthracene-14-carboxylate and methyl 5-phenylbenzo[1,2-*h:5,4-h'*]diquinoline-3-carboxylate, rigid semi-helical aromatic spacers with convergent functional groups, syntheses and structures, 983
- MM2 calculations, intramolecular [2+2] cycloaddition approach to [7]-prismane analogs, 1613
- naphthalene systems, aryl-substituted, framework for receptor model, synthesis and rotational barriers, 1359
- p*-benzylphenylidiphenylmethyl, photophysics and photochemistry in soln, 5109
- phenanthrene, photo-Diels-Alder addition to *N*-methyltriazolidinedione, 5509
- phenanthrene system, application of silicon modified reduction and reductive alkylation, 3761
- phenanthrols, regioselective synthesis, directed ortho metallation connection to aryl-aryl cross coupling, 5459
- plumbazeylanone, revised structure, x0010
- polycyclic aromatic hydrocarbons via titanium-catalysed aldol-type condensation of silyl enol ethers with 2-arylaetaldehydes, 3885
- polycyclic peri-hydroxy aromatic compds via base-induced intramolecular cycloadditions of homophthalic anhydrides, 5943
- poliquinones, approach to synthesis via Weiss reaction, progress towards synthesis of dicyclopentapentalenes, 171
- (-)-retigeranic acid, enantioselective synthesis via [2+3] annulation, 3283
- spirodienone, photochemical reactivity and prep via oxidation of bis(2-hydroxy-3,5-di-*t*-butylphenyl)methanone, 5673
- (*s*)-sulphinene synthesis, 107
- tribenzotricyclo[5.3.0.0',0'']deca-2,5,7,9-tetraene, synthesis of new strained olefin with high unsaturation, 2333
- tricyclic carbocycles via enolate alkylation of bicyclo[2.2.2]oct-5-en-2-one and radical cyclisation, 5789
- tricyclo-macrolide FK-506, non-racemic synthesis of segments, 277,281
- tris(phenylethynyl)methyl and α,α -bis(phenylethynyl)benzyl cations, ¹³C NMR; tris- and bis-ethynologs of triphenylmethyl cation, 5157
- Polycyclic heterocyclic compounds**
- 2,3,6,7-tetrahydrobenzo[1,2-*b:4,5-b'*]difuran deriv, bromination of radical cation, 3721
- 2,4,6,8-tetraazabarbaralanes, models for tetraazasemibullvalenes, 3639
- 2,4,6,8-tetraazabarbaralanes, models for tetraazasemibullvalenes, 3639
- 2,5b,10b,11-tetramethyldihydropyrene[5,6-*c*]furan, furan-isoannulated [14]annulene with as strong a diamagnetic ring current as parent system, 3483
- [2.2](2,5)pyrazinophanes, synthesis and molecular structure, 3655
- [4.3.0]pyrazolignones, potential antibacterial agents, 6569
- 2- and 4(5)-(2-pyridinyl)imidazoles, synthesis by Pd-catalysed cross coupling, 5013
- 3,4-dihydro-4-methyl-2-(quinolin-3-yl)-2H-pyrano[3.2-*c*]quinolines, synthesis, 2235
- 3-acylcarbazoles, synthesis and further elaboration into 6H-pyridocarbazoles, 6505
- 4(3H)-quinazolinones and benzimidazo[1,2-*c*]quinazolines, functionalised, via aza-Wittig reaction of iminophosphoranes with isocyanides, CO, or CS₂, 3849
- 4,5-diazatricyclo[4.4.0.0',0'']deca-4-ene, UV-laser nitrogen extrusion, lifetime determination of bicyclo[2.2.2]octa-2,5-diyl by dioxygen trapping, 6605
- 4,6-dimethyl-4,5,6,7-tetrahydropyrazolo[1,5,4-*ef*]benzodiazepines, diastereomeric, synthesis, 4291
- 4-*p*-methoxybenzyl-5-(1'-carboxymethoxy-2'-[1'']-1''-dimethylallyl)-2',3'-dihydroindole[methylidene]-1,2-*L*-pyrrolidinopiperazine-3,6-dione, prep via Ireland ester enolate Claisen rearrangement, 2539
- 4H-furo[3.2-*c*]benzopyrans, synthesis via radical cyclisations, 3335
- 6,10-disubstituted [1,2,4]trithio[5,4-*H*]benzopentathiepins, new cyclic polysulphides, reactions and synthesis, 6291
- 6-aryl-6-hydroxy-1,2,3,5,6,10b-hexahydropyrazolo[2.1-*a*]isoquinolines, mechanism of stereoselective deoxygenation with borane-THF in trifluoroacetic acid; stereocontrolled proton transfer in an ammonium-iminium rearrangement, 5073
- 9-(α -methyl vinyl)3-methyl[4.3-*a*]triazolo benzimidazole, synthesis from 1,5-benzodiazepine, 195
- 9-azaphenanthrene derivs via arylamines, 5213
- aza-anthraquinones, 4,5- and 4,8-disubstituted, regioselective synthesis by Diels-Alder route, 5913
- azadirachtin, conversion to azadirachtinin skeletons, chemistry of insect antifeedants from *Azadirachta indica*, 1849
- azaphenanthrene alkaloid, synthesis of eupolauramine, 4297
- benzopyrano[4,3-*b*]pyridines, benzothioopyrano[4,3-*b*]pyridines and pyrrolo[3,2-*b*][1,4]benzothiazines, synthesis, 2703
- benzoehikonin and benzocycloshikonin, synthesis, 85
- benzo[*c*]phenanthridines, formation by oxidative C-N bond fission of protoberberines followed by intramolecular recyclisation in cell cultures of *Corvallis incisa*, 6457
- bis-indazolo[2,3b:3',2'-*f*]pyridazine, photolabile new heteroaromatic system, 4315
- C-symmetric phospho[2.2.2]-cyclophane, synthesis, 5101
- camptothecin, chemical rearrangement to mappicine ketone, 6847
- cis-pyrano[2,3-*b*]pyran, synthesis via stereoselective glycosidation of activated glycols with C1-oxygenated allylsilane, 4517
- dibenz[*c,r*][1,5]azastibocine system, transannular bond formation between Sb and N atoms, formation of X-Sb-X and X-Sb-N* hypervalent bond, 5401
- epimonothiodioxopiperazine, fungal toxin, isolation from *Phoma lingam*, 3471
- ethynylazaspirocycloundecene, synthesis, approach to side-chain of unsaturated histriocotoxins, 2989
- furanodocalins, formation by intramolecular Diels-Alder cyclisations of 2-vinylfurans, 2107
- furo[2,3-*b*]benzofurans via aryl radical-induced cyclisation routes, abbreviated synthesis of aflatoxins B₁ and B₂, 4685
- furo[3,2-*b*]naphtho[2,1-*d*]furan, rearrangement to pyranonaphthoquinone, 5987
- heterocyclic ortho-quinone, bharanginin from *Pygmaeoprema herbaea*, structure, 4881
- heterotropane derivs, formation by rearrangement of epoxy imines, 4973
- hexahydro-1,5-methanoazocino[3.4-*b*]indole fragment of aluamilline-type alkaloids, construction, 2361
- imidazo[1,2-*a*]pyridones, synthesis via annulation of imidazolines, 5005
- imidazo[4,5-*e*]pyrazoles, new synthesis, 6471
- lampteroflavin, bioluminescent compod from *Lampteromyces japonicus*, 1769
- mesomeric betaine of azolium azolate, synthesis and properties, 491
- meta-(phenylazo)azobenzenes, *trans-cis* photoisomerisation, 563
- methyl 7-phenylidibenz[*a,j*]anthracene-14-carboxylate and methyl 5-phenylbenzo[1,2-*h:5,4-h'*]diquinoline-3-carboxylate, rigid semi-helical aromatic spacers with convergent substituents, syntheses and N-benzylidene aniline, clay-catalysed [2+2] and [2+4] cycloadditions with vinyl ethers

to give tetrahydroquinolines and azetidines, 547
 naphtho[1,2-d][1,3]oxazines via acid catalysed cyclisation of *N,N*-dialkyl-2,4-bistrifluoroacetyl-1-naphthylamines, 4599
 naphtho[2,3-b]pyran-5,10-quinones, naturally occurring, synthesis of α -caryopterone, dihydro- α -caryopterone and their isomers 6-hydroxy-dehydro- α -lapachone and 6-hydroxy- α -lapachone, 155
 new tetracyclic system related to aptazapine, synthesis by one-pot double annelation, 6471
 norbornadienes fused with quinone units, photocyclisation and isomerisation to quadricyclanes, 1405
 (+)-octahydrodeacetyldebrumolaurin, enantioselective synthesis, asymmetric synthesis of medium-ring oxygen heterocycles, 4333
 (+)-octahydrodeacetyldebrumolaurin, enantioselective synthesis, asymmetric synthesis of medium-ring oxygen heterocycles, 4333
 oxygen-bridged aza[15]- and aza[17]annulene dicarboxylates, prep via intramolecular azide cyclisation, 219
 perylenequinone, synthesis amenable to prep of related natural products, 225
 phenanthridines, phenanthridinones and biphenyl alkaloid imine, regioselective synthesis, directed metallation connection to aryl-aryl cross coupling, 5463
 peroralen, synthesis of new analog built on benzodioxinic moiety using as key intermediate 6-hydroxy-7-formyl-1,4-benzodioxan, 2665
 (-)-pulo'pone, enantioselective synthesis and absolute configuration by asymmetric intramolecular Diels-Alder reaction, 5885
 pulo'upone, total synthesis, 2757
 pyranol[3,4-b]indol-3-ones, intramolecular Diels-Alder reactions, 2693
 pyranol[3,4-b]thiophen-5-ones, stable thiophene-2,3-quinodimethane equivalents, 5817
 pyrido[2,3-d]pyrimidines via [4+2] cycloaddition of 6-[(dimethylamino)methylene]amino-1,3-dimethyluracil with electron deficient olefins; pyrrolo[3,4-c]pyridines and theophylline derivs via Michael addition of 6-[(dimethylamino)methylene]amino-1,3-dimethyluracil with DMAD or azodicarboxylates, 4401
 pyrroloquinoline quinone, ¹³C- and ²H-labelled, synthesis, 3709
 pyrrolo[1,2-a]indolines, rapid entry via [3+2] cycloadditions of indolenine-derived azomethine ylides, 5325
 pyrrolo[2,3-d]pyrimidine nucleoside, mycalisins A, natural, synthesis, 4073
 pyromethanones, synthesis, 4823
 rigid cyclo-bis-intercaland macrocyclic receptor incorporating a phenazines group and metal binding subunits, synthesis, 5255
 scapaniapyrone from liverwort *Scapania undulata*, structure, 6793
 spiro-benzoquinonefuran unit in stypodione, synthesis, 3857
 tetrahydronaphtho[2.1-b]thiophene,

synthesis via intramolecular Diels-Alder reaction with an 1-alkenylthieno[2.3-c]furan, 1137
 thieno[3,4-d]pyrimidine C-nucleoside analog of inosine, two-step synthesis via C-glycosylation of substituted heterocycles under Friedel-Crafts conditions, 3537
 trans-4,5-bis(hydroxydi-phenylmethyl)-2,2-dimethyl-1,3-dioxacyclopentane and host guest complex formation for optical resolution of bicyclic enones, 551
 trioyolic fluorescent nucleoside isolated from phenylalanine transfer ribonucleic acids, access to synthesis of wybutosine, 4129
 trithiazoles, high selectivity in photoisomerisation, 3963
 X-ray structure and isolation of intermediate dihydroimidazole in synthesis of glycofuran from glyoxal and urea, 1015
 Z and E isomers of 2-(2'-butylallylidene)-6,7-diazabicyclo[3.2.2]nona-3,6-diene, prep of precursor to conformationally constrained 8 pi polyenes, 2715

Polyenes

8 pi non-Kekule-, *cis/trans* isomers of a triplet, generation and ESR characterisation, 2719
 8 pi non-Kekule-, conformationally constrained, prep of precursors, 2715
 polyacetylene melynies from Vanuatu marine sponge, 2037

Polyenones

polyoxo compds, synthesis via prep of potent building blocks, stereoselectivity in [2,3]Wittig rearrangement, of isopropyl [(2E)-1-(benzyloxyalkyl)-2-butenyl]oxyacetate, 4763

Polyethers

goniodomin A-, macrolide from *Gonioloma pseudogoniaulax*, 1149
 tricyclic-, fragments incorporating spiroacetal subunit, synthesis using directed bisepoxide cyclisation, 5301
 triterpenoid-, (+)-thyriferol and (+)-venustatriol, total syntheses, 1143

Polymerisation

cyclo-, C-C bond cleavage and C-H bond cleavage, alkali-metal induced in 1,5-hexadienes, 3929
 electro-, of perfluoro-cycloalkenes, 1295

Polymer

macrocyclic polycarboxylate-hydrophobic ammonium carriers, active transport of uranyl ion, 1153
 new bicyclo[2.2.1]hept-2-ene-carbon monoxide copolymers, Pd-catalysed synthesis, 2115
 new polymeric support synthesis for prep of fully protected peptide fragments, 4005
 polycyclic phenylethanolamines, synthesis via aryne condensation of ketone enolates, 1385
 polymer-bound iodosobenzoate reagents, cleavage of reactive phosphates, 2433
 polystyrene-supported peptide linked epoxidation catalyst, 971

Polyols

syn-, general synthetic protocol, 5423

Polypropenols

plant-, asymmetric hydrogenation, synthesis of dolichols, 5343

Poly sulphides

new cyclic-, reactions and synthesis of 6,10-disubstituted [1,2,4]trithiolo[5,4-H]benzopentathiepins, 6291

Porphyrins

chlorophyll a of 17-nor-DPEP series, molecular fossils, structure, synthesis and geochemical significance, 371
 dimeter-, ether and related porphyrin dimers, synthesis, 2501
 hemato-, dimers and trimers with ether linkages, synthesis, 4657
 iron and cobalt-, perchlorates, reaction with trimethylsilyldiazomethane, 5677
 iron tetraphenyl-, with covalently-attached phenolate tail, synthesis and chemistry, 5345
 metallo-, catalysed oxidative desulphurisation at pentacoordinated P by cumyl hydroperoxide, 1827
 new chiral-, with C₂ symmetry and HPLC behaviour of the derived diastereomeric amino ester adducts, 5271
 "strapped"-, structural characterisation via NOE techniques, 1427
 tetracoordinated iron bis-strapped chiral-, bearing a nitrogen base on one handle, 5653
 tetraphenyl-, C-hydroxylation, introduction of functionality oriented towards porphyrin centre, 1597
 with 6-membered exocyclic rings, synthesis by Macdonald condensation and the a,b-biladiene route, 6877

Potassium

crown-potassium enolate complexes, conjugate additions, 6943
 hydride of-, and sodium hydride. purification, prep of trialkylborohydrides with large steric requirements, 3197
 hydride of-, purification and role in new borohydride chemistry, 3195

Prenylation

terpene synthesis by baker's yeast, prep of chiral building blocks, reduction of S-functionalised prenyl derivs, 2197

Propellanes

[1.1.1]-, prep of bicyclopentyl-lithium intermediate for prep of 1-substituted bicyclopentanes, 289
 [3.2.1]-, reciprocal tests of steric position down-disrotatory thermal decyclisation, cycloreversion stereochemistry of 6,7,8-trimethyltricyclo[3.2.1.0^{1,4}]octanes, 4835
 [3.3.3]-, via rearrangement of dispiro[3.0.4.2]undecanes, synthesis of (i)-modhephene, 1263

Prostacyclins

analogues stabilised by acceptor substituents at 5-position, 4285
optically active 3-oxa-carbacyclin precursors featuring asymmetric Horner-Emmons reaction, 1773

Prostaglandins

endoperoxide of-, model compd, electrophile-initiated conversion into thromboxane B skeleton, 4595
mexiprostil, highly convergent synthesis of 16(R) 16-methoxy 16-methyl PGE₂ methyl ester, 6769
precursor of-, synthesis by mixed Kolbe electrolysis of 3-(cyclopent-2-enyloxy)propionate, 2801

Prostanoids

(-)-preclavulone-A, enantioselective total synthesis, 995
chiral 13-oxa-, approach to via intramolecular [2+2] cycloaddition of keteniminium salt, 3369
marine-, widespread route to, biosynthesis of 8-R-HPETE and preclavulone A from arachidonate in species of Caribbean coral, 2555

Protecting groups

1,1,1,3,3,3-hexafluoro-2-propyl-, in synthesis of DNA fragments via phosphoramidite intermediates, 81
[2-(trimethylsilyl)ethoxy]methyl protected acridone, synthesis of 9-alkyl and 9-arylacridines, 5123
4-methoxybenzyl-, for OH functions, crucial role, stereocontrolled synthesis of polyether antibiotic salinomycin, 5143
(4-methoxybenzyl)-, of OH functions under mild acid conditions, 4139
5'-levulinyl and 2'-tetrahydrofuran-yl protection, use in synthesis of oligoribonucleotides by phosphoramidite approach, 5383
acid-labile-, removal under mild conditions, 5609
and deprotected alcohols as t-butyl ethers in pheromone synthesis, 2951
at primary OH function of carbohydrates, selective introduction of p-anisyl ether, 1389
bifunctional silyl-, for nucleosides, tetra-t-butoxydisiloxane-1,3-diyl, new type, 1561
differentially protected tartaric aldehydes, synthetic equivalents, simple route to useful C-4 chiral synthons, 6163
groups incorporating a 4-pentenyl acetal moiety, cleavage under neutral conditions, 6549
methyl phosphate-, removal from oligodeoxynucleotide phosphotriesters with 2-mercapto-benzothiazole reagent, 5479
N-, effect on asymmetric induction, (4+2)-cycloaddition of 1-methoxybuta-1,3-diene to α -amino aldehydes, 5975
N-, zinc enolates of
N-benzyloxy-carbonyl group, one-pot conversion into N-t-butoxy-carbonyl group, 2983
peptide synthesis, application of N⁶-(2,2,5,7,8-pentamethyl-chroman-6-sulphonyl) deriv of

FMOC-arginine, 4341
phenylacetyloxymethylene, carboxyl-, removable with immobilised penicillin acylase, useful in benzyl penicillin chemistry, 4623
protected form of secoxyloganan aglucone, synthesis, 3511
protected peptide fragments, simultaneous multiple synthesis on "allyl"-functionalised cellulose disc supports, 5871
t-butyl based-, in peptide synthesis, deprotection with chlorotrimethylsilane-phenol reagent, 303
tertiary alcohols, tetrahydropranylation, triphenyl-phosphine as mild catalyst, 4583

Proteins

and/or nucleic acids, cross-linking by 2,2'-bis(methoxy-methylene)-2,2'-sulphonyl-diacetonitrile, 5847
labelling with technetium-99m, synthesis of bifunctional chelate agent, 3219
neocarzinostatin chromophore A, synthesis of parent carbocyclic subunit, DNA study, 909
peptide functionalised diacylaminoepidolidiones, ¹H NMR evidence for β -sheet formation, 5077
peptide-functionalised diacylaminoepidolidiones, synthesis as templates for β -sheet formation, 5079

Protonation

gas-phase-, of vinyltrimethylsilane using γ -radiolysis of methane, 4159

Pterins

2'(S),3'(R),5'-trihydroxy-pentyladenine, enzyme inhibitor, synthesis, 1107
caffeine, C-5 methylation controlled by benzoyloxy radical addition at C-8, 2055

Purines

3'azido-3'-deoxythymidine and 3'-azido-2',3'-dideoxyuridine, total stereoselective synthesis from D-mannitol, 5349

Pyranones

4(R)-silyloxy-6(S)-iodomethyl-tetrahydropyran-2-one and its enantiomer, building blocks for HMG-CoA reductase inhibitors, 2563
5-substituted-4-hydroxy-3,4,5,6-tetrahydro-2H-pyran-2-ones, synthesis, selective differentiation of two ester functions of dimethyl acetonedicarboxylate, 37
a synthetic dihydropyran-4-one, cuprate addition, formation of (\pm)-forskolin, 2031

Pyrans

2-aryloxytetrahydro-, effect of p-substituents on conformation, 471
3,4-dihydro-2H-, cycloaddition with benzylideneanilines, 3585
6-alkyl-3,4-dihydro-2H-, Ni-catalysed coupling with Grignard reagents, stereoselective synthesis of trisubstituted alkenes, 2353
 γ -, route reaction of cyclopropenes with oxadiazoles, 3231
dihydro-, substituted, synthesis of carbapenems, 6345

tetrahydro-, and tetrahydrofurans, optically active, formation via Wittig reactions of unprotected aldohexoses, 693
triterpenoid polyethers (+)-thyriferol and (+)-venustatriol, total syntheses, 1143

Pyrazines

2,3-dihydro-, photosensitised cyclisation, synthesis of isonitriles, 1127

Pyrazoles

1H-pyrazol-4-ols, synthesis from 2-(2-alkylidenehydrazino)acetic acids, 1341
4-trifluoromethyl-, synthesis via cyclisation of trifluoroacetylated hydrazones, 5281
synthesis from 1,3-dinitroalkanes, 6001

Pyrazolidinones

[4.3.0]pyrazolidinones, potential antibacterial agents, 6569
"dimers" of pyrazolidin-3-one-azomethanimines without centre of symmetry via three step addition-addition-elimination pathway, 2939
antibacterial agents, synthesis of nuclear analogs, thioaldehydes in cycloadditions, 5061

Pyrazolidinium salts

ylide-, 1,3-dipolar cycloaddition with thioaldehydes to give nuclear analog of pyrazolidinone antibacterial agent, 5061

Pyrazolines

2-, oxidative ring opening, application to lactamisation and formulation of 1,3,6H-thiazines, 6249

Pyrethroids

dialkylphosphonofluoracetyl chlorides introduction of 2-oxophosphonate 1-fluorinated synthons on organometallic reagents, Horner reaction of derived anions with aldehydes gave 2-fluoro-2-enones, application to *cis*, *trans* coronaldehyde ethyl esters gave 2-fluoroethyl pyrethroid derivs, 2655

Pyridazines

new indolyl-1,4-dihydroxy-, and annelated pyridazines via reaction of 2-vinylindoles with dimethyl 1,2,4,5-tetrazine-3,6-dicarboxylate, 3927

Pyridines

1,4-dihydro-, derivs, 2-substituted, improved synthesis by regioselective bromination, 6835
1-(t-butoxycarbonyl)1,2-dihydro-, α -metalation, 1751
1-alkyl 1,2,3,6-tetrahydro-, via conversion of β -allenic N-alkylimines by silver nitrate and then by sodium borohydride, 6609
2-(3-butanyl)-1,2-dihydro-, neutral electron demand Diels-Alder reactions, rate retardation by 4-alkyl substituents, 3187
2-amino-, derivs, by ring closure of conjugated carbodiimides, via aza-Wittig reaction of iminophosphorane with isocyanates, 379
3-acyl-, activated by methyl

- chloroformate, regio- and chemo-selective addition of alkynyltin reagents to 2-position, synthesis of 2,3-disubstituted 1,2-dihydropyridines, 1785
- 4-substituted and 4,5-annulated, route via cycloaromatization of α -oxoketene dithioacetals with lithiumacetonitrile, 6633
- alkyl-, benzylic-type positions, new type of functionalisation by DMSO-AC₂O, 4619
- and piperidines, new synthesis, [3+3] annulation of 2-azaallyl anions, 4819
- annulated-, route via intramolecular [4+2] cycloaddition of α,β -unsaturated hydrazones, 6349
- cage compds, symmetrical, all 6,8 or 10 lone pairs on N- atoms or intervening pyridine rings oriented towards central cavity, synthesis, 1789
- chiral 1,4-dihydro-, (NADH-mimic), stereoselective reduction of prochiral ketones and imines, 5617
- dihydro-, enantioselective Hantzsch synthesis via metallated chiral alkyl acetoacetate hydrazones, 6437
- NADH models bearing same chiral auxiliary, reductions, inversion in enantioselectivity, 931
- [n](2,4)pyridinophane ring system, synthesis and structural studies, 5957
- ring of-, 2,6-disubstituted, in place of carbons 7-9 of natural eicosanoid, synthesis of stable LTb, antagonist, 143
- ring of-, expansion by a nitrene, 489
- substituted-, nucleophilic substitution with substituted phenacyl benzenesulphonates, multiple Hammett study, 4431
- Pyridinium salts**
- 1-(phenoxycarbonyl)2,3-dihydro-, addition of alkylzinc iodides, synthesis of 2-alkyl- Δ^2 -piperidines, 6711
- oxoammonium salt, new selective oxidation of alcohols with ester group, 5671
- pyridinium chlorochromate, regioselective oxidative cleavage of 1,4-dioxenyl carbinols new prep of α -hydroxy and α -keto acids, 6261
- pyridinium poly(hydrogenfluoride), reaction with glycols giving Ferrier rearranged sugar fluorides, 1363
- Pyridones**
- inclusion complexes and optically active host compds, irradiation, enantioselective conversion into β -lactam derivs, 4299
- substituted-, prep by ring closure of acylated aminoazabutadienes, 4855
- Pyrimidines**
- 1-(hydroxyalkoxy)-, synthesis, 4013
- 4,5-didehydro-, reactivity and electronic structure, 1687
- 4-alkyl-, and 2-alkylquinolines, photo fragmentation, 6853
- 5-acylaminoacilins and 5-acylaminoacilins and 5-acylaminoacilins-4(3H)-ones, ring transformation into imidazoles, 4607
- dihydropyrimidin-2(1H) or (3H)-one, N-substituted, regioselective synthesis, 5405
- Pyrimidinones**
- 6-alkyl-2-methoxy-4-(3H)-, regioselective prep, antitumor and antimicrobial activity of 4-O-acylated pyrimidine derivs, new agents for selective acylation of amines, 2741
- Pyrimidones**
- 6-alkyl-2-methoxy-4-(3H)-, regioselective prep, antitumor and antimicrobial activity of 4-O-acylated pyrimidine derivs, new agents for selective acylation of amines, 2741
- Pyrolysis see thermochemistry**
- Pyrones**
- 3-aryl- or 3-alkenyl-4,6-dimethyl-2-, by Ag-ion promoted rearrangement of 4-aryl- or 4-alkenyl-3-bromo-4,6-dimethyl-3,4-dihydro-2-pyrones, 3825
- 5-methoxy-2-, Diels-Alder cycloaddition, synthesis of substituted benzenoids and biphenyls, 1595
- Pyrololes**
- 1-methyl-, reaction with N-halocimides, effect of halogen, 2405
- 2-carboxaldehydes of-, 4-mono- and 4,5-disubstituted, synthesis, lithiation of 3-bromo-6-dimethylamino-1-azafulvene dimer, 3215
- chlorophyll derivs, isolation of meso-oxochlorins and ring opening of zinc meso-oxochlorins to give dihydrobiliverdins by two oxygen molecule mechanism, 5707
- formation from a (1-azabuta-diene)tricarbonyliron complex, 1425
- N-methyl-, Mannich reactions using aminals and aminol ethers activated with acetyl chloride or sulphur dioxide, 2997
- pyromethanones, synthesis, 4823
- Pyroolidines**
- 2-alkyl-, enantiospecific synthesis, key intermediates for azabicyclic alkaloids, 631
- 3-methylene-, and 3-methylene-tetrahydrofurans, prep via addition of 2-bromocinnomethyl-2-propenyl ethers to aldehydes, ketones and imines followed by Pd-catalysed cyclisation, 3579
- antihypertensive-, asymmetric synthesis, methylpyroglutamate as chiral synthon, 3259
- functionalised, stereospecific formation via intramolecular oxime olefin cycloaddition, 5313
- N-H-, prep via intermolecular [3+2] cycloaddition between olefins and ylide generated from amine N-oxide designed to allow dealkylation of cycloadduct, 3481
- ring of-, for kainoids, synthesis, 2195
- via intramolecular addition of Kolbe radicals generated from β -allylaminoalkanoates, 2797
- Pyroolidines**
- 1 β ,2 β -epoxy-1 α -hydroxymethyl-8 α -, identical with "subulacine N-oxide", 4943
- alexine, 3-epialexine and 7-epialexine, synthesis from D-glucose, 5441
- Pyrylium salts**
- 2,4,6-tris(dialkylamino)-, and related systems, synthesis and reaction behaviour, 5695
- Quadricyclanes**
- cycloreversion to acylnorbornadiene promoted by metal oxides, 4109
- formation via photo-cyclisation and isomerisation of norbornadienes fused with quinone units, 1405
- Quassinoids**
- bruceantin, synthesis of precursor 15-deoxybruceolide, 5953
- Quinoxalines**
- benzimidazo[1,2-c]-, and 4(3H)-quinoxalines, functionalised, via aza-Wittig reaction of iminophosphoranes with isocyanides, CO₂ or CS₂, 3849
- Quinolines**
- 1,2,3,4-tetrahydro-, and 1,2,3,4-tetrahydro-1,6-naphthridines by direct lithiation, 5725
- 2-alkyl-, and 4-alkylpyrimidines, photo fragmentation, 6853
- 2-methyl-, homolytic substitution by crown ethers, 5037
- 8-hydroxy-, synthesis, basis for hexadentate chelating agent, 1351
- formation via flash vacuum pyrolysis of 1-allylbenzotriazoles and dihydrobenzoxazines, 953
- substituted-, synthesis via thermal or photo-electrocyclic rearrangement of α -vinyl imidates under non-aqueous conditions, 3517
- tetrahydro-, and azetidines via clay-catalysed [2+2] and [2+4] cycloadditions of N-benzylidene aniline with vinyl ethers, 547
- tetrahydro-, synthesis, role reversal of cyclopentadiene condensation with heterodienophiles derived from arylamines and aldehydes, 5855
- Quinols**
- and extended-, (diacetoxyiodo)-benzene oxidation to quinones, 677
- Quinones**
- formation via (diacetoxyiodo)benzene oxidation of quinols and extended quinols, 677
- planar-, and flavones, hindered carbonyls, ¹³O NMR data, 2143
- Quinoxalines**
- 1-(quinoxalin-2-yl)-alkane-1,2-dithiols and -alkene-1,2-dithiols, model compds for pterin which ligands Mo in oxomolybdenum enzymes cofactor, 1453
- Quinoxalidines**
- 3-quinuclidinone and N-methyl-4-piperidone stereocentred synthesis of spirocyclic lactones and ethers by phenylthio migration, 5321
- Racemisation**
- 2-amino-1,3-propane diols, new strategy; key intermediates for synthesis of antibiotic drugs,

- 5561
 α -arylketones, measurement by use of stereospecifically β -deuterated acyclic α -phenylketones, 1283
- Radicals**
- 1-hydroxyalkyl and 1-alkoxyalkyl-, ketene dithioacetal S,S-dioxide as efficient acceptor, functionalising α -position of alcohols and ethers, 5387
- 1-sila-allyl and 1,1-dimethyl-1-sila-allyl-, electron spin resonance study, 3493
- 3-O-benzyl-6-deoxy-D-hexofuranosyl-6-, intramolecular H-shift, configuration at 1'-position of 6-deoxy-3-O-(1-phenylalkyl)-1,2-O-isopropylidene-D-allufuranoses, 5297
- 6,7-unsaturated carbonyl-, cyclisations, studies, 2585
- α -amino-, ω -unsaturated, generation and cyclisation, application of reductive, single electron transfer processes, 6685
- additions via-, of tributyltin hydride and azobisisobutyronitrile, synthesis of higher carbon sugars, 2335
- alkenyl-, generated by 1,5-H-transfer to alkoxy radicals, intramolecular cyclisation, 1441
- alkoxy-, mechanistic aspects of tandem β -fragmentation-intramolecular functionalisation, 5979
- alkoxy-, intermediates, generation using organoselenium reagents, intramolecular H-abstraction to afford cyclic ethers, 5429
- alkoxyfluoroalkyl-, structure and conformation from solid state ESR spectra, 4611
- alkyl-alkenyl cross coupling, cobaloxime-mediated, effect of remote ligand substituent on premature β -H elimination, 6037
- alkyl-alkenyl cross coupling, cobaloxime-mediated, prep of ammonium 3-deoxy-D-manno-2-octulosonate from D-mannose, 3191
- alkyl-nitroalkylanion cross coupling, cobaloxime mediated, 6545
- allyloxy-, cyclisation, 837
- anions of-, sonochemically generated by cyclisation of O-allyl benzamides, 2183
- aryl-, generated by electroreduction of aryl halides, addition to C=C bonds, 639
- aryl-, induced cyclisation, route to furo[2,3-b]benzofurans, abbreviated synthesis of aflatoxins B₁ and B₂, 4685
- aryl-, intramolecular addition onto α -position of α,β -unsaturated N-alkylamides, 6657
- benzenethiyl-, promoted synthesis of vinylcyclopentanes from vinylcyclopropanes and alkenes, 5135
- benzoyloxy-, addition at C-8 of caffeine, control of C-5 methylation, 2055
- captodative type-, rate of formation from thermal decomposition of substituted arylazo compds, 3379
- carbon-, exchangers and accumulators role of organic tellurides, 6581
- cobaloxime-, chemistry, alkyl-alkenyl cross coupling, 167
- cyclisation and enolate alkylation of bicyclo[2.2.2]oct-5-en-2-one, prep of tricyclic carbocycles, 5789
- cyclisations onto 2(5H)-furanone and maleate electrophores leading to spiro- and linear-fused γ -lactone ring systems, 3869
- cyclisations, synthesis of functionalised spiroethers, 1315
- cycloaddition of photochemically generated phenylcyclopropane radical cation to N-methylnaphthylimide radical anion, mechanism, 513
- di-, constrained cyclopropyldicarbonyl, generated in photodecarbonylation of 2,4-diphenyltetracyclo[3.3.2-0^{2,3}.0^{3,4}].deca-9-ene-6,8-dione, new skeletal rearrangements, 5933
- free-, addition of 1-thiosugars, new approach to synthesis of 1-thioglycosides, 4293
- free-, chemo- and regioselective reductive opening of 1,2-epoxides, 819
- free-, from N-hydroxypyridine-2-thione esters, EPR detection, 917
- free-, involved in methylation and hydroxymethylation, application to stereoselective construction of 20(S)-sterol side chain, 4001
- free-, of alkoxythiocarbonyl, intramolecular addition to acetylenes, synthesis of lactones, 6127
- induced cleavage of ketooxepoxides, 955
- intra- and intermolecular reactions with tributyltin hydride, C-C bond formations, prep of 2,3-dihydrobenzofuran and 2,3-dihydroindole derivs, 4133
- intramolecular addition to aldehydes to form cycloalkanols is not reversible, 1645
- intramolecular, mediated arylation using tributyltin hydride/AIBN, synthesis of steganone, 2987
- Kolbe-, generated from β -allylaminoalkanoates, intramolecular addition, prep of pyrrolidines, 2797
- Mn(III)-based oxidative free radical cyclisations of β -ketoesters with Mn(OAc)₂ to give 7- and 8-membered rings, 5209
- mononated cyclohexadienyl-, captodative interactions, 1437
- octyl-, rate constants for reaction with ethyl, butyl and cyclohexyl iodide and with ether and THF, mechanistic probe studies, 3449
- perfluoroalkyl ether peroxy-, rate constants for self reactions, comparison with rate constants for non fluorinated analogs, 5557
- reactions of (2-trimethylsilyl-allyl)triphenylstannane with alkyl halides, a neutral acetone enolate equivalent, 6969
- stabilising function of-, enhanced rate for methylenecyclopropane rearrangement by pyridine N-oxide group, 749
- stable localised biradical, 1,3-diphenyl-1,3-cyclopentenediyl, 3753
- triphenylstannyl-, or benzenethiyl-, promoted transformation of 1,1-dialkoxycarbonyl-2-(1,3-butadienyl)cyclopropanes into 2-ethenyl-3-cyclopentenes, 1543
- triplet spiro[2.6]nona-4,7-diyl diradical, generation by N-extrusion from azoalkane 6,7-diazaspiro[bicyclo(3.2.2)non-6-ene-2,1'-cyclopropane]; conformational influence of lifetime of a 1,4-cycloheptadiyl as determined by cyclopropylcarbonyl "free radical clock", 5637
- Reagents**
- 1,1,4,4-tetrakis(trimethylsilyl)butane-1,4-diyl dianion a reagent for Peterson reaction via dimerisation of 1,1-bis(trimethylsilyl)ethylene, 6939
- 2,2'-bis(methoxymethylene)-2,2'-sulphonyldiacetonitrile for cross-linking proteins and/or nucleic acids, 5847
- 2-mercaptobenzothiazole-, removal of methyl phosphates protecting group from oligodeoxynucleotide phosphotriesters, 5479
- 12-silacrown-3 new type of anion complexing agent, synthesis and transport properties, 297
- β -lactam formation from β -amino acids, 2203
- γ -alkoxy substituted allylic Cr-reagent via reduction of acrolein dialkyl acetals with CrCl₂, use in selective synthesis of erythrol,2-diols, 5263
- alkylating-, pentacoordinate organosilicate use in Pd-catalysed methylation of aryl halides, 97
- alkynylzinc-, use in new amidoalkynylation, application to α -thiolactams, 5391
- allyl selenides from allyl silanes and PhSeSe+(CH₃)PhBF₄-, isoinidole synthesis of cytochalasin, 2287
- allylic sulphides with 1-phenyltetrazole-5-thio group, prep from allylic alcohols using S₂S'-bis(1-phenyl-1H-tetrazol-5-yl) dithiocarbonate and reactions involving allylic sulphides, 4105
- aluminum trichloride-, deoxygenation of oxiranes, 5815
- aminomethanesulphononic acid and prim amines, prep of mono-substituted guanidines, 3183
- ammonium formate as catalytic H-transfer agent, use in reduction of aldehydes and ketones to methylene derivs, 3741
- benzyltrimethylammonium tetrachloroiodate, benzylic chlorination of alkylaromatic compds, 5783
- bifunctional-, available from anthranufin, prep of anthraquinone C-glucosides, 6909
- bis(tributyltin) oxide, cleavage of esters, application to deprotection of POM penicillanate esters, 6893
- bis(trichloromethyl)carbonate, use in prep of N-carboxyanhydrides of α -amino acids, 5859
- bisocarbonyl diselenides, new carbonylating reagents, Lewis acid promoted carbonylation of aromatic compds, 6121
- bismuth trichloride as new catalyst for aldol reactions, 4719
- Burgess-, use in conversion of prim amides to nitriles, 2155
- C-S bond formation catalysed by bis(diphenylphosphino)-methane complexes of Pt, 4477
- camphanlyboronic acid, chiral derivatising agent for optical purity determination of diols, 6063

- chiral boron-, control by of aldol condensations with chiral ethylketones, 585
- chiral organo-Al-, catalysis of asymmetric ene reaction, 3967
- chlorochromate-, oxychlorination of alkenes, prep of α -chloro-ketones and competition by substituent-directed oxidation, 6707
- chlorotrimethylsilane-phenol-, deprotection in peptide synthesis using *t*-butyl based protecting groups, 303
- cis*-decalin via Diels-Alder and double Michael addition, 5117
- CN(R,S) method, synthesis of 3,5-disubstituted pyrrolizidine alkaloids, 1391
- complex-, reduction of ketones, stereochemistry, 1379
- copper hydride for conjugate reductions, synthesis of [(Ph₃P)CuH]₂, 3749
- Dess-Martin periodinane-, use in oxidation of α -hydroxy esters to α -keto esters, 3433
- di-*t*-butyl N,N-diethylphosphoramidite and dibenzyl N,N-diethylphosphoramidite-, 'phosphate-triester' phosphorylation of serine containing peptides, 2369
- dimethyl (R)₂S-2-(10-isobornylsulphinyl)maleate, chiral synthetic equivalent of dimethyl acetylenedicarboxylate, application to synthesis of carbocyclic nucleosides, (-)-neplanocin A and (-)-aristeromycin, synthesis, 6143
- dimethylsulphoxide and trichloromethyl chloroformate, oxidation of alcohols, 6619
- efficient oxidation of sulphides to sulphoxides using new sulphinylperoxy intermediate generated from 2-nitrobenzenesulphinyl chloride and superoxide, 6453
- electrophilic P-, for insertion of electrophilic P into cyclopropanes, new synthesis of phosphatanes, 1219
- epoxyalkylcopper-, direct formation from activated Cu and epoxyalkyl bromides and their intramolecular cyclisations, 6753
- esters activated by electro-attracting group e.g. ethyl trifluoroacetate or ethyl oxalate, reaction with CF₃Br-Zn-pyridine, Barbier reaction, 1029
- fluorine containing organo-Zn-, Reformatskii-type reactions of chlorodifluoroacetic acid derivs, 2943
- fluorine-containing organo-Zn-, synthesis, Reformatskii-Claisen reaction of chlorodifluoroacetic acid derivs, 3291
- for automated sequencing of DNA, prep of 7-iodo-2',3'-dideoxy-7-deazapurine nucleosides as key intermediates, 4061
- hypervalent organoiodine reagents in 8-fragmentation of bicyclic carbonamides leading to imides, 6661
- iodosobenzene tetrafluoroborate, stable electrophilic hypervalent iodine reagent without nucleophilic ligands, 3717
- Knoevenagel condensation under heterogeneous catalysis, silica gel functionalised with amino groups as a new catalyst, 2261
- methyl isocyanide transfer-, synthesis of 2-thionaphthylmethyl isocyanide, 1435
- modified Seyferth-Wittig-, [2-(trimethylsilyl)ethylidene]tris(2-methylphenyl)phosphorane, stereoselective synthesis of *Z*-allyltrimethylsilanes, 5965
- monosopinocampheylborane-N,N,N',N'-tetramethylethylenediamine complex, X-ray structure and asymmetric hydroboration, 3385
- N,N-diisopropyl dibenzyl phosphoramidite-, synthesis of myo-inositol phosphates, 979
- n*-Bu₃SnH-Et₃B, reduction of dithiocarbonates, access to hydrocarbons from sec alcohols, 6125
- new agents for selective acylation of amines, regioselective prep of 6-alkyl-2-methoxy-4-(3H)-pyrimidinones, antitumor and antimicrobial activity of 4-*O*-acylated pyrimidine derivs, 2741
- new efficient desulphurising-, Ni containing complex reducing agents NaH-RONa-NiX₂, 2963
- new fluorinating reagents, 6087
- new fluoromethylation-, α -fluoromethyl-N-methylphenylsulphoximine, 3365
- new phosphorylating-, dibenzyl phosphorfluoridate, 5763
- Ni-containing complex reducing agents, epimerisation of alcohols, 1383
- NiCRA-bpy-KI, prep and use for the cross coupling of aryl halides, 545
- Noyori's-, cambranolide precursors via stereospecific conversion of homochiral α -alkoxystannanes, 1657
- organo-Al-, new synthesis of C₁₀-juvenile hormone via kinetic resolution of epoxides, 1417
- organo-Cu reagents, 1,6-addition to 3-ethynyl-2-methyl-2-cyclopentenone, 5851
- organo-Mn-, use in synthesis of diastereomeric (\pm)- α -bisabolols and (\pm)-chlorophenoxamine, 3659
- organo-Se-, generation of alkoxy radical intermediates, intramolecular H-abstraction to afford cyclic ethers, 5429
- organo-Sn-, stereospecific group transfer, regioselective Pd-catalysed tandem cyclisation-anion capture processes, 5565
- organo-Zn reagents, Cu and Ni catalysed Sn²⁺- and Sn²⁺-regioselective allylation, 5155
- organo-Zn-, use in direct substitution of 2-benzenesulphonyl cyclic ethers, 4869
- oxalyl chloride-DMSO-, use in Swern oxidation of diverse alcohols, products result from electrophilic chlorination, 49
- polymer bound iodosobenzate-, cleavage of reactive phosphates, 2433
- potassium hydride purification and role in new borohydride chemistry, 3195
- RCu substituted enones, new BF₃ promoted cyclisation, 6693
- RCu(CN)ZnI.BF₃, reaction with aldehydes to give polyfunctional sec alcohols, 3887
- receptors and synthetic-, with different degrees of helicity and with convergent functional groups, construction, 983
- Reformatsky-, of difluoroacetate, generation and aldol reaction, 1803
- sodium phenylseleno(triethoxy)borate generated from (PhSe)₂ with NaBH₄ in EtOH, reduction of epoxy ketones, 347
- stereoselective reducing-, 9-alkyl-9-borabicyclo-[3.3.1]nonanes, 1069
- sulphur dioxide, effect on Mannich reactions of phenols, 5801
- t*-butyl-2,2,2-trichloroacetimidate for prep of *t*-butyl ethers and esters, 2483
- TiCl₄-Mg-, reductive coupling of (R)-(+)-carvone and (+)-camphor, X-ray structure of (+)-(1S,5R,1'S,5'R)-carvone pinacol, 5925
- TiCl₄/Mg/BrCH₂CH₂Br-, 1,2-dioxogermanic equivalent, 1583
- trans*-4,5-bis(hydroxydiphenylmethyl)-2,2-dimethyl-1,3-dioxacyclopentane and host guest complex formation for optical resolution of bicyclic enones, 551
- trialkylborohydrides with large steric requirements, prep, purification of sodium and potassium hydrides, 3197
- trimethylsilyldiazomethane, prep of (9E)-1-trimethylsilyl-1-alkenes, 6295
- triphenylphosphine as mild catalyst for tetrahydropyranylation of tertiary alcohols, 4583
- unsolvated magnesium diisopropylamide, reduction of aldehydes and ketones to alcohols, 139
- Zn and tri-*n*-butylphosphine, promoted new method of C=C formation, 6119

Rearrangements

- 1-(trimethylsilyl)-methylcycloalkane carboxaldehyde to one-carbon ring enlarged 2-(trimethylsilyl)methylcycloalkanes, 1815
- 1-methyl-2-substituted-5-nitroimidazoles to 4-nitroimidazoles via CH₂ as catalyst, 5361
- [2,3]Wittig-, asymmetric induction, of allylic ethers with chiral substituent, new entries to stereocontrol over three contiguous chiral centers, 4587
- [2,3]-Wittig-, of nonconjugated sec carbanions, synthesis of [(allyloxy)methyl]sulphones as equivalents, 5233
- [2,3]Wittig-, of isopropyl [(2E)-1-(benzyloxyalkyl)-2-butenyl]oxyacetate, stereoselectivity, prep of potent building blocks for synthesis of polyoxo compds, 4763
- [2,3]Wittig-, use in stereocontrolled synthesis of C₁₀-C₂₀ building blocks of amphotericin B, 5747
- [2,3] Wittig rearrangement, of tertiary allylic ethers, application to synthesis of C₁₂-C₂₂ subunit of zincoophorin, 6905
- [3,3]-, of substituted 3 α - and 5 α -hydroxytricyclo-[5.2.1.0^{2,6}]decadienes, acid-, of murrangatins, 6153
- "activated sulphoxide", ene-type reaction with non-activated olefin to give allylsulphonium salt and counter-ion dependent (1,2)- vs [3,2] rearrangement of ylide generated from the sulphonium salt, 6637

- Ag-ion promoted-, of 4-aryl- or 4-alkenyl-3-bromo-4,6-dimethyl-3,4-dihydro-2-pyrones, prep of 3-aryl- or 3-alkenyl-4,6-dimethyl-2-pyrones, 3825
- Al-catalysed-, of tosyl esters of pimaric and isopimaric series, products with cyclopropane ring and strobane skeleton, 1695
- alkylative epoxide-, application to stereoselective synthesis of chiral pheromone epoxides, 865
- allylic sulphilimines and phosphinimines, contrasting thermal reactions, 5353
- an enantioselective carbocation-, in solid state, addition of bromine gas to crystalline dibenzobarrelene, 1485
- and synthesis of cyclic sulphonium ylides via rhodium carbenoid mediated cyclisations, 6009
- anionic oxy-Claisen-, of tricyclic α -allyloxy ketone, 4229
- biomimetic-, of germacrene-humulene sesquiterpenoids, 1829
- bromoketone phenol, 5099 (CH, CN), Cr(CO)₃, induced conversion of 1-phenyl-indene to 3-phenyl-indene, 3489
- cationic oxa-Cope-, evidence for in synthesis of oxacyclic carboxylic esters via methoxycarbonyloxonium ions, 6365
- chemical-, of camptothecin to mappicine ketone, 6847
- Claisen-, of allylic α -isocyanate esters, regioselective allylation of α -isocyanate esters at a carbon, 5151
- Claisen-, synthesis of flav-3-enes, 6797
- comparison of thermal and transition metal complex promoted rearrangements, of *trans*-bicyclo[4.1.0]hept-3-ene derivs, 4803
- competitive dienone-phenol-, 2,4-substituted naphth-1-ols, regioselective prep, 4827
- di- π -methane photo-, of dibenzobarrelene diesters in solid state, greatly altered regioselectivity, 2041
- diastereoselective [2,3]Wittig-, of tertiary α -lithio ethers, 6901
- dispiro[3.0.4.2]undecane to (+)-modhephene and (+)-isocomeene under kinetic or thermodynamic control, 5525
- dispiro[3.0.4.2]undecanes to [3.3.3]propellanes, synthesis of (+)-modhephene, 1263
- divinylcyclopropane-, complementary 1,4-stereocontrol in phorboid cycloheptene synthesis, 6741
- dyotropic-, stereospecific construction of fused butyrolactones with three contiguous asymmetric centers, 1747
- enammonium-iminium-, stereoccontrolled proton transfer; stereoselective deoxygenation of 6-aryl-6-hydroxy-1,2,3,5,6,10b-hexahydroindole[2,1-a]isoquinolines with borane-THF in trifluoroacetic acid, 5073
- epoxy imines-, formation of heterotropene derivs, 4973
- Ferrier rearranged sugar fluorides via reaction of glycols with pyridinium poly(hydrogen fluoride), 1363
- furo[3,2-b]naphtho[2,1-d]furan to pyranonaphthoquinone, 5987
- imine-epoxide-, formation of substituted piperidines, stereoselective synthesis of (+)-solenopsin A, 4977
- intramolecular-, Pd-catalysed, synthesis of α -allyl- α -amino acids, 4981
- Ireland ester enolate Claisen-, synthetic approach to brevianamides A and B, prep of 4-p-methoxybenzyl-5-(1'-carboxymethoxy-2'-[1",1"-dimethylallyl-2',3'-dihydroindole]-methylidene)-1,2-L-pyrrolidino-piperazine-3,6-dione, 2539
- Meinwald-, of electron deficient systems, investigation, 6313
- methylene-cyclopropane-, effect of trifluoromethyl group, 6839
- neopentyl-, suppression and opening of indole ring in indoxyltricarboxylchromium and indoline tricarboxyl chromium complexes, 103
- new skeletal-, via constrained cyclopropylidene diradical generated in photodecarbonylation of 2,4-diphenyltetracyclo[3.3.2.0^{2,3}.0^{1,2}.0^{1,2}]deca-9-ene-6,8-dione, 5933
- nitrocarbenes to acyl nitroso compds, 5719
- O-glycoside to C-glycoside, C-glycosidation of phenols with glycosyl fluoride under Lewis acid conditions, 6935
- oxy-Cope-, of bis-acetylenic alcohols to mixtures of E and Z-enynes, enolisation and electrocyclic ring closure to methylenecyclopentenones, 6865
- photo and thermal-, of diazo-2-trimethylsilyl-2-sila-3,5-cyclohexadiene with silabenzene and silafulvene as intermediates, 467
- photo-, of 4-alkyl-4-alkoxy-2,5-cyclohexadienones, synthesis of 4-(alkyldimethoxy methyl)cyclopent-2-en-1-ones, 1103
- photo-, of 8-oxabicyclo[3.2.1]oct-6-en-2-ones, 6889
- photo-, of pyranocarbazole alkaloids, 6625
- photo-, of quinone monoketals, synthesis of substituted cyclopentenones, 163
- photo-, solid state, of 2,5-cyclohexadienones, 3091
- photo-electrocyclic or thermal-, of α -vinyl imidates under non-acidic conditions, synthesis of substituted quinolines, 3517
- prototropic-, of oxalic acid diphosphide and monophosphide, prep of diphospha- and monophospha-butenes, 607
- regioselective Fries-, of methyl 3-(2-acyloxy-4-methoxyphenyl)propanoates, total synthesis of linear acylated coumarins gelferin and dehydrogelferin, 1311
- retinoic acid, reaction in sulphuric acid, 6279
- Schmidt-, of α,α -bisalkylated β -keto esters, asymmetric synthesis of α -alkylated α -amino acids, 403
- sesquialternate thermal-, of syn-9-vinyl-bicyclo[6.1.0]nona-2,4,6-triene to tetracyclo[5.4.0.0^{2,3}.0^{1,2}.0^{1,2}]undeca-5,8-diene, 5249
- siloxo[2,3]Wittig-, new diastereoselective prep of 1,2-diol systems, 5409
- skeletal-, of bicyclo[2.2.2]octenes via bicyclo[3.2.1]octene system, synthesis of (+)-hinesol and (+)-10-epi-hinesol, 3105
- spontaneous-, of Corey's reaction, 851
- stereoselective [2,3] sigmatropic-, and intermolecular generation of allylic oxonium ylides, 5119
- styrene oxide, diastereotopic selection of C2 hydrogens in rearrangement of C1-substituted epoxides, 2575
- tandem cyclopropanation/Cope-, sequence, intramolecular approach to 7-membered rings, 975
- tandem Michael addition/enolate-accelerated Cope-, mechanism, fused cyclooctanes via intramolecular addition of unsymmetrical allylsilane to conjugated dienone, 2773
- thermal autoimerisation of acenaphthalene, benzenoid ring contractions, 6857
- thermal-, of N-acetyl-N-nitrosourea-amic acid deriv, synthesis of 3-deoxy-D-nonulosonic acid, 4449
- thermal-, of oxazole endoperoxides, fragmentations and methanol additions, 1007
- triphenylstanny- or benzenethiyl-radical promoted transformation of 1,1-dialkoxy-carbonyl-2-(1,3-butadienyl)cyclopropanes into 2-ethenyl-3-cyclopentenes, 1543
- twofold [3,3]sigmatropic-, Pd-catalysed, synthesis of axially dissymmetric 3,5-octadiene framework with C₂ chirality, 1157
- Receptor binding**
neutral macrocycle, binding affinity for quaternary ammonium and imonium compds due to ion-dipole attraction, 6039
- trans*-2,5-diaryltetrahydrofurans, antagonists of platelet activating factor, indicative of dual binding modes to PAF receptor, 2899
- Receptors**
and synthetic reagents with different degrees of helicity and with convergent functional groups, construction, 983
- arglotoxins 636, 659 and 673 total synthesis, 6223
- macrocyclic polyammonium-, synthetic [15]-N-, complexation of ATP, 6231
- macrotricyclic anion molecules, dome-shaped cyclophane type, synthesis, 1709
- model framework, synthesis and rotational barriers of aryl-substituted naphthalene systems, 1359
- new hydrophobic macrocyclic redox-active host molecules with four ferrocenyl groups and a novel twelve ferrocenyl group containing analog, synthesis, 2349
- peptide receptor analysis, application of peptides organometallic derivs, 5759
- potent PAF-receptor antagonist, enantioselective cyclisation of chiral butane-1,4-diols to chiral tetrahydrofurans, synthesis of *trans*-2-(3-methoxy-5-methylsulphonyl-4-propoxyphenyl)-5-(3,4,5-trimethoxyphenyl)tetrahydrofurans, 6211
- rigid cyclo-bis-intercaland macrocyclic-, incorporating a phenazine group and metal binding subunits, synthesis, 5255

supramolecular-, erythromycin, 1119
trans-2,5-diaryltetrahydro-, antagonists of platelet activating factor, indicative of dual binding modes to PAF receptor, 2899

Reductions

1,2-anti diastereoselective-, of 2-alkyl-3-hydroxy ketones via their silyl ethers, 1021
 1-phenylethanol by etherated boron trifluoride-triethylsilane system, stereoisotopic study, 5793
 α -fluorosulphide-, to fluoroalkanes, 6851
 β , δ -diketo esters to γ - β , δ -dihydroxy esters, 6467
 acid chlorides to aldehydes using hypervalent silicon hydrides, 1271
 aldehydes and ketones to alcohols via unsolvated magnesium diisopropylamide 139
 aldehydes and ketones to methylene derivs using ammonium formate as catalytic H-transfer agent, 3741
 aldehydes with lithium diisopropylamide as hydride donor, 4057
 alkyl iodides by LAH supports polar S_N2 mechanism, a quantitative analysis of "mechanistic probe" studies, 3451
 allenic alcohols with *Saccharomyces cerevisiae*, 3797
 and aldol condensations, use of optically pure binaphthylcyclic silanes to give highest ee's for chirality transfer with organosilanes, 6199
 and chemoselective carbonyl alkylation of aldehydes or ketones, 3101
 and reductive alkylation, silicon modified, application to phenanthrene system, 3761
 asymmetric borane-, of ketones catalysed by oxazaborolidine, 4453
 asymmetric-, by Baker's yeast of β - and γ -nitro ketones, 4769
 asymmetric-, of carbonyl compds with hydrosilanes catalysed by chiral bases, 89
 asymmetric-, of ketones by glycerol dehydrogenase from *Geotrichum* as catalyst, 2453
 asymmetric-, of ketoxime ethers, distinction between anti and syn isomers leading to enantiomeric amines, 223
 baker's yeast-, of 5-acetyl-2-isoxazolines, synthesis of enantiomerically pure 2,3-dihydroxy ketones and 1,2,4-triols, 6167
 bioelectrocatalytic-, of NAD⁺ to NADH on diaphorase modified electrodes, 1551
 CO₂ in water to oxalic acid and glyoxylic acid electrochemically, 945
 conjugate-, synthesis of [(Ph₃P)CuH], 3749
 cyclisation of 8,8'-bisbromomethyl-1,1'-binaphthyl, 1521
 dimerisation of imines in a Pb/Al bimetal redox system, 3811
 dissolving metal-, of camphor, prep of dimeric products, 2527
 dithiocarbonates with n-Bu₃SnH-Et₃B, access to hydrocarbons from sec alcohols, 6125
 electro-, of sugar oximes, 3699
 epimerisation of alcohols by Ni-containing complex reducing

agents, 1383
 group selective-, of acetals related to ANSA chain of streptovaricins, conformational and stereochemical analysis, 4085
 hydrophobic dienes and dienophiles, rates of intermolecular Diels-Alder reactions in ethylene glycol, 3745
 isocyanates, Cp₂TiCl₂-catalysed reaction with Grignard reagents, formation of reduction-coupling product of isocyanates, 651
 ketones by complex agents, stereochemistry, 1379
 lithium-liquid ammonia-, β -elimination of aminoborane, 4713
 (NMCp)₂TiCl₂-catalysed-, of aliphatic, aromatic and α , β -unsaturated ketones by Grignard reagent, 4113
 metal-ammonia-, and reductive alkylation of naphthalene sulphonamides, new route to substituted naphthalenes, 4473
 nitrobenzene to aniline in presence of aldehydes, alkyl halides and acid halides, 5083
 potentials of cage-structure halogenated derivs and alicyclic and aromatic ketones via cyclic voltammetry, 3935
 reductive coupling of α , β -enones promoted by Mg and Mg-MgBr₂, 3679
 reductive, single electron transfer processes, application to generation and cyclisation of ω -unsaturated α -amino radicals, 6685
 selective-, by sodium sulphide of aromatic/aliphatic nitro groups 635
 selective-, of alkylthio-methyleniminium salts by use of trimethoxysilane and dilithium 2,3-butandiolate, new entry to S,N-acetals, 5771
 selective-, of cycloalkanone using aluminium amalgam, 525
 selective-, of ketones in presence of enones, 517
 stereoselective oxido-, of organometallic meso diol and corresponding dialdehyde catalysed by horse liver alcohol dehydrogenase, 5769
 stereoselective reducing agents, 9-alkyl-9-boratabicyclo[3.3.1]nonanes, 1069
 stereoselective-, of β -alkoxy ketones, synthesis of *syn*-1,3-diols, 5419
 stereoselective-, of prochiral ketones and imines by chiral 1,4-dihydropyridine (NADH-mimic), 5617
 unusual-, by formic acid, 5701
 with NADH models bearing same chiral auxiliary, inversion in enantioselectivity, 931

Regiocontrol

and stereo-controlled synthesis of α -branched allylsilanes, 4991
 and stereocontrolled synthesis of indole alkaloid yuehchukene, 2993
 by electron withdrawing groups, Rh-catalysed C-H insertion in α -diazoketones, 2283
 functionalisation of 2,5-dimethyl-2,4-hexadiene, into epoxy alcohols in presence if Ti or V, 531
 synthesis of ergosterol B-isomers, 1581
 tin mediated Pd-catalysed

alkylations of vinyl epoxides, 2931

Regioselection

1,4-, iodofunctionalisation of 1,3-butadiene with I(py)BF₄, 6497
 access to vinyl lithiums via coupling of vinyl and aryl triflates with stannyl cuprates, 4795
 additions of Grignard and lithium reagents to 2-[(benzylidene)amino]benzoxonitrile and 2-[(diphenylmethylene)amino]benzoxonitrile, 4265
 allylation of α -isocyanate esters at α carbon, Claisen rearrangement of allylic α -isocyanate esters, 5151
 and chemo-selective addition of alkynyltin reagents to 2-position of 3-acetylpyridines activated by methyl chloroformate, synthesis of 2,3-disubstituted 1,2-dihydropyridines, 1785
 and diastereoselective hydroxylation of N-t-butoxycarbonyl-L-pyrroglutamate monoenolate to optically pure (4R)-hydroxyproglutamate from which (-)-bulgacine was synthesised, 329
 and pH dependence in hydrolysis of nitrophenyl acetates, catalytic properties of dimethyl- β -cyclodextrin bearing imidazolylethyl group, 311
 and stereo-selective prep of silyl enol ethersby alkydenation of silyl esters, 1065
 and stereo-specific ring expansion of optically active cyclopropylvinylcarbinols, diastereoselective synthesis of *cis* Quercus-lactone b, 1537
 and stereochemistry, electrophilic additions to epoxy cycloalkenols, 2097
 and stereoselective formation of silyl enol ethers via oxidation of vinyl anions, 4269
 and stereoselective oxidative cyclisation of cycloalkenols, substituent directed with ceric ammonium nitrate, 1771
 and stereoselective Pd-catalysed functionalisation of dienes, synthesis of (\pm)-sativene, 5973
 and stereoselective synthesis from 1,3-dienes and a Fischer carbene complex, 2319
 and stereoselective synthesis of substituted piperidones, 5115
 cleavage of oxiranes with acyl chlorides, Co-catalysed, 4985
 cycloacetalisation of α -oxoketene dithioacetals in Reformatsky reaction, synthesis of substituted 2-hydroxy-6-methylthiobenzoxanes, 497
 Diels-Alder cycloaddition between 3-fluorobenzene and 2-alkylfurans, 6227
 effect of neighbouring group on-, in Wittig reactions with maleic anhydrides, 6203
 formation of 3-t-alkoxy-1,2-glycols from 2,3-O-alkyldienetriols with trimethylaluminium, 1823
 formation of bromohydrins by reaction of epoxy-azetidionones with MgBr₂; route to 4-bromomethylcarbonylmethyl-2-azetidionone a key carbapenem precursor, 5197
 functionalisation of homopropargyl alcohols via intramolecular hydrosilation of acetylenes,

- 6955
greatly altered in di- π -methane photorearrangement of dibenzobarrelene diesters in solid state, 2041
- hydroboration of allylsilanes, 2073
- hydrocarboxylation of olefinic amines, characterisation of key intermediate, 6421
- hydroxylation of β -lactams by fungus *Beauveria sulfurescens*, 6611
- iodolactonisation of 1,6-heptadien-4-carboxylic acid derivs, 1517
- mercuration, fluorination of substituted veratroles, 1501
- mono-addition of lithium enolates to N-carbamoyl-L-pyrroglutamates, 4303
- Pd-catalysed oxidation of 1-alken-4-ols, new synthesis of Y-butyrolactols, 5181
- Pd-catalysed reaction of silyl-substituted allylic carbonates with vinyl epoxide, 343
- prep of 2,4-substituted naphth-1-ols, competitive dienone-phenol rearrangement, 4827
- quantitative nitration of aromatic hydrocarbons, in the lab, 5909
- quantitative nitration of aromatic hydrocarbons in the lab, 5657
- reaction of 2-aza-pentadienyl anions with carbonyl compds, 3647
- reaction of halosilane with oxide of vinyl 2-furan, styrene and 1-butene, ^{13}C NMR, 3307
- reductive opening of 1,2-epoxides via free radical reaction, 819
- ring-opening of oxiranes by silyl-substituted allyl anions, a regiochemical chameleon, 4281
- synthesis and cross coupling of 1,2-borostannyl-1-alkenes, 261
- synthesis of 2-(1-aminoethyl)furans, Hg-induced cyclisation of dipropargyl ethers, 5029
- synthesis of 4,5- and 4,8-disubstituted aza-anthraquinones by Diels-Alder route, 5913
- synthesis of 7,8-dioxygenated-3,4-dihydroisoquinolines via metallation of β -phenethylamines, 3865
- synthesis of isopropenyl esters via ruthenium catalysed addition of N-protected amino acids to propyne, 5365
- synthesis of N-substituted dihydropyrimidin-2(1H) or (3H)-one, 5405
- Regioselective reactions**
additions of hydrazoic acid and benzylamine to 1-(aryl-sulphonyl)bicyclo[1,1,0]butanes, synthesis of cis and trans 2,7-methanoglutamic acids, 1591 and stereo-specific class 2 tandem Michael addition-cycloaddition reactions of oximes, 4323
- bromination, improved synthesis of 2-substituted 1,4-dihydropyridine derivs, 6835
- formation of 4-lithio-2-(t-butyl)dimethylsilyl-3-hydroxymethylfuran, approach to 3,4-disubstituted furans, 1247
- formation of alkylidene-1,2-oxasiletane, 4747
- generated lithium 2,4-dimethoxy-3-lithobenzoate, prep of N-succinimidyl-2,4-dimethoxy-3-(tri-N-butylstannyl) benzoate, 4385
- hydroxylation of acylic monoterpene alcohols by *Aspergillus niger*, 579
- oxidative cleavage of 1,4-dioxenylic carbinols with pyridinium chlorochromate, new prep of α -hydroxy and α -keto acids, 6261
- Pd-catalysed tandem cyclisation-anion capture processes, stereospecific group transfer from porganotin reagents, 5565
- route to calmetanoloactone via Rh-catalysed [2+2+2] cyclo-additions, 813
- synthesis of phenanthridines, phenanthridinones and biphenyl alkaloid ismine, directed metallation connection to aryl-aryl cross coupling, 5463
- synthesis of phenanthrols, directed ortho metallation connection to aryl-aryl cross coupling, 5459
- synthesis of isoquinoline alkaloids, use of arylsilanes in directed Pictet-Spengler cyclisations, 6715
- Resins**
2-methoxy-4-alkoxy-benzyl alcohol-, synthesis of fully protected peptide fragments, peptide synthesis via a combination of solid-phase and solution methods, 4009
- Resolution**
and enantiomeric excesses of chiral aldehydes via chiral imidazolidines, 2675
- biocatalytic-, of (+)-hydroxyalkanoic acid esters, strategy for enhancing enantiomeric specificity of lipase-catalysed ester hydrolysis, 4927
- cyclic and acyclic chiral ketones as their oxime dinitrophenyl carbamates on chiral stationary phase derived from (S)-1-(6,7-dimethyl-1-naphthyl)isobutylamine, 4735
- determination of absolute stereochemistry and identification of S-4-chlorotryptophan in crude seed protein of *Pisum sativum*, 2339
- enzymatic-, of 2,3-epoxyalcohols as intermediates in synthesis of sex pheromone of Gypsy moth, 2455
- kinetic-, of methyl ketone cyanhydrin acetates with microbial enzyme, 6957
- optical-, by complexation, of propionic acid-, butyric acid- and 4-hydroxycyclopent-2-en-1-one derivs of new chiral host compd, 10,10'-dihydroxy-9,9'-biphenanthryl, 1807
- optical-, of bicyclic enones using trans-4,5-bis(hydroxydiphenylmethyl)-2,2-dimethyl-1,3-dioxacyclopentane and host guest complex formation, 551
- optical-, of bicyclic esters with pig liver esterase, structural requirements, 2697
- optical-, of R,R,N,N-dimethyl 1,2-diphenyl ethylene diamine, 2679
- P-diastereomeric-, of nucleoside 3'-O(S-alkyl) and nucleoside 3'-O(S-aryl) methylphosphonothioates, 1227
- simple chromatographic-, of diastereomeric α -hydroxycycloalkane ketals, 4035
- Retinoids**
3-diazoacetylretinals, optically active, synthesis with trisopropyl-phenylsulphonylhydrazone, 2275
- 11-t-butyl-, extreme twisting of side chain by catalysed isomerisation of 8-allenic retinals, 1251
- 13-cis-retinoic acid, stereoselective synthesis via titanium induced reductive elimination, 209
- all-cis-retinal and 7-cis,11-cis-retinal, synthesis and properties, 419
- approach to-, cycloaddition of [3+2] nitrile oxide, 1307
- aromatic-, route to 5-(5,6,7,8-tetrahydro)5,5,8,8-tetramethyl-2-anthracenyl-2-furan and -2-thiophene carboxylic acids, 4409
- pentaneals, regioselective photoisomerisation, effect of Me substituents, 853
- retinoic acid, reaction in sulphuric acid, 6279
- vitamin A and all trans retinoic acid, stereoselective synthesis via titanium induced reductive elimination, 213
- Rhodium and compounds**
carbenoid mediated cyclisations, synthesis and rearrangement of cyclic sulphonium ylides, 6009
- carbenoid mediated cyclisations, synthesis and X-ray structures of cyclic sulphonium ylides, 6013
- catalysed C-H insertion, in α -diazoketones, regiocontrol by electron withdrawing groups, 2283
- catalysed reductive esterification, 1759
- complexes of unsymmetrised and symmetrised DIOP analogs bearing p-dimethylamino group, synthesis and more effective in asymmetric hydrogenations than DIOP, 4755
- mediated diastereoselective aldolisation of tetroses and pyranoses, 4649
- mediated diastereoselective aldolisation to tetroses and pyranoses 3761
- new chiral peralkyl-AMPP-Rh-complexes, catalysis of asymmetric hydrogenation of activated ketones, 3675
- Rh(II) acetate-catalysed intramolecular addition of N-benzyl diazoacetamides, synthesis of cycloheptatriene, 2639
- Ring contraction**
[2,3] Wittig-, of macrocyclic furan diether, synthesis of possible precursor of pseudopterane lactone diterpene kallolide, 741
- benzenoid-, in thermal autoisomerisation of acenaphthalene, 6857
- controlled diastereoselective [2,3] Wittig-, synthesis of 6-hydroxycambrane precursors, 3547
- oxidative-, of benzeneselenenate adducts of glycol ethers, synthesis of showdowycin, 2711
- ring contracted aldehyde from treatment of 3,4,6-tri-O-benzyl-D-glucal with thallium nitrate, 1841
- Ring expansion**
and Diels-Alder reactions of 1-cyclobutenyl ketones, prep of 1-acetyl-1,3,5-cyclooctatrienes, 6283
- chiral lactams, synthesis using group-selective N-insertion for

- prochiral ketones, intermediate in benzomorphinan synthesis, 151
- cyclopentanones to 7-membered rings, 1733
- epoxide-, 5-exo iodonium assisted, synthesis of cyclic ethers, 2093
- one-carbon-, prep of 1-alkoxy-2-methylene-cycloalkanes, 1819
- one-carbon-, selective, directed by sillon, 1815
- pyridine ring-, by a nitrene, 489
- regio- and stereo-specific-, of optically active cyclopropyl-vinylcarbinols, diastereo-selective synthesis of *cis* Quercus-lactone b, 1537
- stereospecific photo-, of a cyclobutanone, total synthesis of muscarines, 159
- Rotation**
- barriers and synthesis of aryl-substituted naphthalene systems, framework for receptor model, 1359
- steric barrier and π -barrier to-, in simple enamines, diethylaminocyclohexenes, conformational studies by dynamic NMR, 3141
- Ruthenium and compounds**
- η^2 C-C binding to a ruthenium complex, 4,3-additions to α,β -unsaturated ketones, 6737
- catalysed addition of N-protected amino acids, to propyne, regioselective synthesis of isopropenyl esters, 5365
- Ru ν -O/Ru ν -H₂O system, electrocatalytic oxidation of olefins and ketones, 765
- tetraoxide of-, oxidation of 4,5-polymethylene-3,6-hexanoxepins, prep of macrocyclic bis- α -diketones, 189
- Samarium and compounds**
- di-iodide of-, ring fission of cyclic β -halogeno ethers, synthesis of (E)- and (Z)-enynes, 6517
- didiodide of-, mediated decarbonylation of α -alkoxyacid chlorides, use in synthesis of 1,2-glycol monoethers, 4847
- diiodide of-, mediated double cyclisation of allyloxybenzoic acid chlorides giving cyclopropanols, 6105
- iodide of-, initiated addition of olefins to fluoroalkyl iodides, 5129
- SmCp₂, mediated mono and double carbonylations of *t*-butyl bromide, 6097
- Schiff bases**
- cobalt-, chelates, catalysed oxygenation of (E)-4-stilbenols, 6629
- cobalt-, complex catalysis, asymmetric induction in oxygenation of styrene, 6309
- cyclic [2+3]-, condensation of tris(2-aminoethyl)amine with dicarbonyls to new series of cage molecules, 385
- diethyl aminomethylphosphonate-, alkylation, prep of γ,δ -unsaturated α -amino phosphonic acids, 4559
- direct diacylation, 5113
- Selenium and compounds**
- 2,11-diselena[3.3]metacyclophane, conformational changes determined by variable temp ⁷⁷Se NMR, 5587
- α -arylseleno-aldehydes, reactivity towards halogens and benzeneselenyl chloride, 5893
- α -metallo selenones, exploratory study, original synthesis of oxaspiropentanes, 3265
- α -selenenylation, enantio-selective, of 2-phenylpropanal, 5889
- allylic selenides and sulphides, synthesis by Lewis acid mediated displacement reactions of sulphones, 6787
- benzeneselenenate adducts of glycol ethers, oxidative ring contraction, synthesis of showdomycin, 2711
- benzeneselenenyl triflate and thioglycosides, efficient O-glycosylation, 1061
- biscarbonyl diselenides, new carbamoylating reagents, Lewis acid promoted carbamoylation of aromatic compds, 6121
- monoseleno- and monothio-acetals, reactivity towards oxidation, synthesis of substituted 2,3-dihydrofurans, 2179
- N-benzoylthio(seleno)ureas, reaction with thiophosgene to give N-[thio(seleno)carbamoyl]-benzimidoylchlorides, 3475
- organo reagents, generation of alkoxy radical intermediates, intramolecular H-abstraction to afford cyclic ethers, 5429
- selenoaldehydes, intramolecular Diels-Alder reaction, 6965
- selenones, synthesis, application to synthesis of alkyl cyclopropanecarboxylates, 3269
- selenophenes, synthesis, 1399
- selenosulphonation of 1,3-dienes, synthesis of 2-(phenylsulphonyl)-1,3-dienes, 1445
- sodium phenylseleno(triethoxy)borate generated from (PhSe)₂ with NaBH₄ in EtOH, 347
- tetraselenarfulvalene and tetrathiafulvalene, unsymmetrically substituted radical cation salts, synthesis and characterisation, 2185
- Selenium halogen derivatives**
- benzeneselenyl chloride and halogens, reactivity towards α -arylseleno-aldehydes, 5893.
- Semiconductors**
- radical ion salt with TCNQ, σ_{rt} 10^{-10} S cm⁻¹, formation, 1075
- Sigmatropic shift reactions**
- hexadentate chelating agent based on 8-hydroxyquinoline, synthesis, 1351
- Sillon and compounds**
- 1,1-dichloro-1-phenyl-2,2,2-trimethyldisilane, Pd-catalysed 1,4-disilylation of α,β -unsaturated ketones, 4147
- (1E,3Z)- and (1E,3E)-1-trimethylsilyl-1,3-dienes, stereospecific synthesis via sequential cross coupling, 3705
- 1-ethoxy-3-trimethylsilyl-1-propene, reaction with aliphatic aldehydes and acetals in presence of TiCl₄ to give 2-formyl allyltrimethyl silanes and 2-formyl-3-alkoxyalkyl-trimethylsilanes, 4717
- 1-naphthylphenylmethylsilyl group use in prep of optically active allyl alcohols and (S)-1-phenyl-1,2-butadiene, prep and separation of diastereoisomers, 1355
- 1-sila-allyl and 1,1-dimethyl-1-sila-allyl radicals, electron spin resonance study, 3493
- 4(R)-silyloxy-6(S)-iodomethyl-Tetrahydropyran-2-one and its enantiomer, building blocks for HMG-CoA reductase inhibitors, 2563
- (9E)-1-trimethylsilyl-1-alkenes, prep via trimethylsilyl-diazomethane reagent, 6295
- 12-silacrown-3 new type of anion complexing agent, synthesis and transport properties, 297
- α,β -epoxysilanes, reaction with metallated alkylaryl sulphones, approach to allylic alcohols, 2497
- α -trimethylsilylmethylene- γ -lactones, desilylation, new route to α -methylene- γ -lactones, 2581
- β - and γ -hydroxysilanes, protodesilylation, deuterium labelling and Si-directed epoxide opening, 6395
- γ -siloxyallene, stereoselective oxymercuration and a stereo-specific Mg-MeOH reduction, synthesis of C₁, C₁₁, portion of paramycin-607, 5505
- acylsilane/ylide chemistry, pure *trans* pterones, stereoselective synthesis of E-11-hexadecen-1-ol acetate, 2777
- alkylidene-1,2-oxasiletane, regioselective formation, 4747
- allyl selenides from allyl silanes and PhSe⁺(CH₃)PhBF₄⁻, isoldolone cytochalasin, synthesis, 2287
- allylic silanes and tropylium tetrafluoroborate, synthesis of 7-alkyl-cycloheptatrienes, 5897
- allylsilane, C1-oxygenated, stereoselective glycosylation with activated glycols, synthesis of *cis*-pyrano[2,3-b]pyran, 4517
- allylsilane, unsymmetrical, intramolecular addition to conjugated dienone, prep of fused cyclooctanes, tandem Michael addition/enolate-accelerated Cope rearrangement mechanism, 2773
- allylsilane, unusual [2+2] cycloaddition with 2,3-O-isopropylidene derivs of aldehyde-aldose catalysed by BF₃, etherate to give homoallyl alcohols, 4953
- allylsilanes for one-pot prep of 6- and 7-membered rings, 689
- allylsilanes, α -branched, regio- and stereo-controlled synthesis, 4991
- allylsilanes, acetal-initiated cyclisation to highly functionalised piperidine derivs, 3247
- allylsilanes, conversion to allylamines via phenyl-tellurinylation, 4949
- allylsilanes, functionalised, direct access, cerium-mediated Grignard reaction of functionalised esters and lactones, 5009
- allylsilanes, hydroboration, regiochemistry, 2073
- allylsilanes, hydroboration, stereochemistry, 2077
- allylsilanes, reaction with phenylthioacetals in presence of AlCl₃, 6175
- allylsiliconates, optically active, asymmetric allylation of aldehydes, stereochemistry and mechanism, 5667
- allyltrimethylsilane aromatic

- comps, new allylation using iodosylbenzene and BF₃OEt₂, 667
- arylsilanes, use in directed Pictet-Spengler cyclisations, regioselective synthesis of isouinolone alkaloids, 6715
- chiral (E)-1-trimethylsilyl-1-alken-3,4-diols via Sharpless asymmetric epoxidation of 1,5-bis(trimethylsilyl)-1,4-pentadien-3-ol, total synthesis lipoxin B, 6297
- chlorotrimethylsilane-phenol reagent, deprotection in peptide synthesis using t-butyl based protecting groups, 303
- diazo-2-trimethylsilyl-2-sila-3,5-cyclohexadienes, photo and thermal rearrangement with silabenzene and silafulvene as intermediates, 467
- directed selective one-carbon ring enlargement, 1815
- (E)-1-trimethylsilyl-1-en-3-yne, (1E,3E)- and (1E,3E)-1-trimethylsilyl-1,3-dienes, diastereoselective synthesis, 2239
- etherated boron trifluoride-triethylsilane system, reduction of 1-phenylethanol, stereoisotopic study, 5793
- functionalised siloxy-anchored monolayers with exposed amino, azido, bromo or cyano groups, 5593
- halosilane, regiochemistry of reaction of with oxide of vinyl 2-furan, styrene and 1-butene, ¹³C NMR, 3307
- hydrides of-, hypervalent, use in reduction of acid chlorides to aldehydes, 1271
- hydrosilanes, asymmetric reduction of carbonyl compds catalysed by chiral bases, 89
- hydrosilylation of ketones, enantioselective Rh-catalysed, application of phosphinites from Cinchona alkaloids, 3235
- intramolecular hydrosilylation of acetylenes, regioselective functionalisation of homopropargyl alcohols, 6955
- ion-vinylsilane-, prep of allopumiliotoxin alkaloids, 6541
- ketenealkylsilylacetals, reaction with ethyl propionate, 6443
- Me₂Si-X, unexpected effects on reactions of higher order cyanocuprates, 6677
- modified reduction and reductive alkylation, application to phenanthrene system, 3761
- N-trialkylsilylimines, enolisable, synthesis using vacuum gas-solid reactions, 1287
- new type of bifunctional silyl protective group for nucleosides, tetra-t-butoxydisiloxane-1,3-diyl, 1561
- octadecyl silylated silicon surface, use of ellipsometry in study on guest selective molecular recognition, 5437
- pentacoordinate organosilicate as alkylating agent, Pd-catalysed methylation of aryl halides, 97
- phenylthiomethyltrimethylsilane, fluorine ion induced reaction with aldehydes and ketones, formation of 8-hydroxyphenylsulphides, 3319
- phenylthiomethyltrimethylsilane, use as formyl synthon, migration and stability of silyl group, 835
- propargyltrimethylsilane, reaction with N-alkoxy-carbonyliminium ions, oxazinone vs allene formation, 367
- Si chirality transfer to C, use of optically pure cyclic silanes with binaphthalene chiral unit, 6199
- silica gel functionalised with amino groups as a new catalyst for Knoevenagel condensation under heterogeneous catalysis, 2261
- silica gel supported metal nitrates, oxidation of alcohols, 6265
- silica, presence in chlorination of phenols with N-chlorodiethylamines, 1319
- silicenium ions, gas-phase protonation of vinyltrimethylsilane using Y-radiolysis of methane, 4159
- silicon tetrafluoride, selective ring opening of epoxides, prep of fluorohydrins, 4101
- silicon tetrafluoride, selective ring opening of epoxides, prep of fluorohydrins, 4101
- siloxy-cyclopropanes, allylative ring opening by silver fluoride and allylic chlorides, prep of δ,ε-unsaturated ketones, 6137
- siloxy-cyclopropanes, Pd-catalysed carbonylative symmetrical coupling, synthesis of 4-keto pimelates, 1541
- silyl enol ethers, regio- and stereo-selective prep by alkylation of silyl esters, 1065
- silyl ethers of 2-alkyl-3-hydroxy ketones, 1,2-anti diastereoselective reduction, 1021
- silyl-cupration of allene, new route to silylated synthons, 1825
- silyl-substituted allyl anions, ring-opening of oxiranes, a regiochemical chameleon, 4281
- silyl-substituted allylic carbonates and vinyl epoxide, Pd-catalysed regioselective reaction, 343
- silylated 1,3-dienes, synthesis via carbopalladation of allenes, 627
- t-butylidimethylsilyl ethers, reductive cleavage with NaH, 6161
- tetrafluoride of-, selective ring opening of epoxides, prep of fluorohydrins, 4101
- trialkylsilyloxyalkynes, synthesis and aromatic annulation, 4917
- trimethoxysilane and dilithium 2,3-butanediolate, use in new entry to S,N-acetals by selective reduction of alkylthiomethyleniminium salts, 5771
- trimethylsilyl cyanide, Pd and Ni-catalysed reactions with methylenecyclopropanes, 3979
- trimethylsilylallenes via low pressure flow pyrolysis of trimethylsilylpropargyl ethers, 609
- vinylsilyl Grignard reagents as aryl traps, new route to (arylalkenyl)silanes, 885
- vinyltrimethylsilane, gas-phase protonation using Y-radiolysis of methane, 4159
- Z-1,2-dialkylvinylsilanes, stereoselective synthesis from acylsilane/yliide chemistry, 2425
- Z-allyltrimethylsilanes, stereoselective synthesis, use of modified Seyferth-Wittig reagent, [2-(trimethylsilyl)-ethylidene]tris(2-methylphenyl)phosphorane, 5965
- (Z,Z)-22,3-bis(trimethylsilyl)1,4-dibromo- and 2,3-bis(trimethylsilyl)-1,1,4,4-tetrabromobuta-1,3-dienes, synthesis and Diels-Alder reactions, 1833
- Silver and compounds**
- fluoride of-, and allylic chlorides, allylative ring opening of siloxycyclopropanes, prep of δ,ε-unsaturated ketones, 6137
- ion of-, coupling of diene and triene diolates of unsaturated carboxylic acids, synthesis of octa- and dodeca-diendioic acids, 6181
- ion of-, promoted rearrangement of 4-aryl- or 4-alkenyl-3-bromo-4,6-dimethyl-3,4-dihydro-2-pyrones, prep of 3-aryl- or 3-alkenyl-4,6-dimethyl-2-pyrones, 3825
- mediated cyclisations of 4-allenyl- and 4-(2-propenyl)azetidiones, stereoselective synthesis of 3-substituted Δ¹-carbapenems via N-C3 closure, 4253
- triflate of-, treatment of 1-bromo-2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl chloride in presence of alcohols, ortho-esterification at anomeric centre, 2651
- Solid state chemistry**
- α,β-unsaturated carbonyl compds reactions with indoles using clay as catalyst, 2577
- addition of bromine gas to crystalline dibenzobarrelene, an enantioselective carbocation rearrangement, 1485
- alkylation of chiral acetoacetates by racemic sec alkyl halides on solid support, stereoselectivity, 4615
- and solution conformation of 2-phosphoryl substituted 1,3-oxathianes, 6801
- and solution methods, combination in peptide synthesis, new acid labile anchor group for solid-phase synthesis of fully protected fragments, 4005
- and solution methods, combination in peptide synthesis, synthesis of fully protected peptide fragments on 2-methoxy-4-alkoxy-benzyl alcohol resin, 4009
- approach to synthesis of RNA fragments, 577
- di-π-methane photorearrangement of dibenzobarrelene diesters, greatly altered regioselectivity, 2041
- ESR-, spectra, structure and conformation of alkoxyfluoroalkyl radicals, 4611
- oligoribonucleotides, N-phenoxycetylated guanosine and adenosine phosphoramidites in synthesis of ribozyme sequence, 4249
- photocyclisation of 2,4,6-trisopropylbenzophenones, 3087
- photorearrangement of 2,5-cyclohexadienones, 3091
- prim and sec alcohols, ester interchange of methyl and ethyl carboxylic esters without solvent, 4567
- structure of diazadibenzo-30-crown-10 disulphonamide, 1575
- structure of molecular complex between a diazadibenzo-30-crown-10 deriv and diquat, 1573
- structures and thermodynamics, correlation in N,N-bis(substituted)-4,13-diaza-18-crown-6

derivs with pi-donor group sidearms, 3025
 synthesis of acyclic oligo-nucleotides, use and prep of glyceronucleoside phosphoramidite synthons, 4831
 synthesis of oligo- α - and oligo- β -deoxynucleotides covalently linked to acridine, 5905

Solutes

thermodynamically based scale of solute H-bond acidity, 1587

Solvents

acetonitrile in reaction of cyclohexanones with Ph₃P and XCOCl, to give 1,1-dichloromethylene compds, 3003
 hydrophobic-, and bovine serum albumin, changes in stereoselectivity and rate in Diels-Alder reactions of 1,4-naphthoquinone derivs with dienes, 3347
 new-, derived products, selective formation via ozonolysis of 1-acetoxy- and 1-chloro-2,3-diphenylindene, 3375

Solvolytic

acetolysis of ¹⁸O-¹³C double labelled β -arylalkyl tosylates, ¹⁸O-scrambling within the sulphonate, ion-pair mechanism, 95
 acetolysis of 1,1,1-triaryl-3-diazo-2-propanones, neighbouring group participation, 1,3-shift of an aryl group via 5-membered transition state, 4193
 acetolysis of trans- and cis-1-fluoro-2-bromocyclopropanes, relative trans/cis ratio 19 at 100°, 53
 bicyclic bridgehead derivs, carbocation stability, evaluation of π -conjugative effect of 2-methylene and 2-oxo substituent, 873
 method for introduction of C-7 OH group in anthracyclines, synthesis of (+)-daunomycinone, 4151

Spiro compounds

[4.5]decane and eremane system, entry, total synthesis of (+)-hinesol and its 10-epimer, 3105
 compds via reaction of cyclic ketene acetals with phenyl isocyanate through zwitterion, 2327
 acetals derived from 1-methone, enantiodifferentiating functionalisation of meso-1,3-diols, 3097
 acetals, synthesis via methanolysis and cyclisation of intermediates in reaction of metal carbene complexes with alkoxy-substituted esters, 3357
 and linear-fused γ -lactone ring systems via radical cyclisations onto 2(5H)-furanone and maleate electrophores, 3869
 azadiosphoranium cation, synthesis and entry to diazadiosphetidine system, 4547
 benzoquinonefuran unit in stypoldione, synthesis, 3857
 cyclic oxaziridines; spectroscopic and conformational properties, 5407
 cyclic skeletons by conversion of bicyclo[m,n,0]alkane rings, 6927
 dienone lactams, isoquinolines and benzazepinones, synthesis via acid catalysed cyclisations of

aromatic diazoacetamides, 2643
 dienone, photochemical reactivity and prep via oxidation of bis(2-hydroxy-3,5-di-*t*-butylphenyl)methanone, 5673
 dienones via thermal [1,3]-O-to C migration in exocyclic vinyl ethers derived from quinols, 3441
 ethers, functionalised, synthesis via radical cyclisations, 1315
 ketal unit of milbemycins and 22,23-dihydroavermectins, enantioselective synthesis, 3667
 ketals, synthesis, 3609
 ketals, two-step synthesis, 2947

Stereochemistry

22,23-dioxygenated milbemycin by NMR studies, 6645
 absolute-, and crystal structure of eudistomin K, 4971
 absolute-, and identification of S-4-chlorotryptophan in crude seed protein of *Pisum-sativum*, 2339
 absolute-, and structure of somniferine and its O-methyl ether, dimeric opium alkaloid, 3115
 absolute-, formation of sesquiterpene sterpurene via enzymic cyclisation, 4337
 alkylation of chiral acetoacetates by racemic sec alkyl halides on solid support, 4615
 and conformational analysis, group selective reduction of acetals related to ANSA chain of streptovaricins, 4085
 and mechanism of asymmetric allylation of aldehydes with optically active allyl-siliconates, 5667
 and regiochemistry, electrophilic additions to epoxy cycloalkenols, 2097
 control of epoxidation of allylic and homoallylic carbamate groups, 2475
 cyclic peptide toxin cyanogenosin-RR from *Microcystis aeruginosa*, structure, 11
 cycloversion-, of 6,7,8-trimethyltricyclo-[3.2.1.0¹,²]octanes, reciprocal tests of steric opposition down-disrotatory thermal decyclisation of [3.2.1]propellanes, 4835
 data in support of cyclic-like transition state in asymmetric Michael addition involving chiral imines, 2667
 fluoride-catalysed aldol reaction on enol silyl ethers, another non-chelate transition state, 2207
 hydroboration of allylsilanes, 2077
 initial-, role in reactions of electrophiles with Schiff base anions, 2441
 intramolecular Diels-Alder reaction of furans with doubly activated dienophiles, 5825
 (+)-negamycin, enantioselective synthesis, 2373
 polyene macrolide nystatin A, OH groups in C-1 to C-10 fragment are all *syn*, 2827
 predictions and theoretical analysis of transannular Diels-Alder reaction of isomeric macrocyclic trienes, 1639
 reduction of ketones by complex reducing agents, 1379
 stereochemical assignment, vicinal isotope effects in ¹³C NMR of monodeuterated allylic alcohols, 6095

Wittig reactions of ylide anions from semi-stabilised phosphonium ylides, 485

Stereocontrol

acyclic-, basis of auxiliary of-, 2,4,6-trimethylbenzoyl group in total synthesis of stage specific embryonic antigen-3 (SSEA-3), globopentaosyl ceramide, 5681
 auxiliary of-, use of of pivaloyl group in stereoselective glycosylation of ceramide derivs, 4097
 complementary 1,4-, phorboid cycloheptene synthesis via divinylcyclopropane rearrangement, 6741
 in synthesis of tetrahydrofurans, cyclisation of diols with phenylthio migration, 4885
 of quaternary chiral center in cyclohexene systems, potential chiral synthons for vitamin D and related compds by enzymatic approach, 6961
 proton transfer in an enammonium-iminium rearrangement; stereoselective deoxygenation of 6-aryl-6-hydroxy-1,2,3,5,6,10b-hexahydroprrolo[2.1]-allo-quinolines with borane-THF in trifluoroacetic acid, 5073
 syntheses and evidence for allyl Pd/olefin-*cis*-insertion in bicyclic systems, intramolecular olefin allylations, 4705
 synthesis of a *trans anti trans* tricyclic via a transannular Diels-Alder strategy, 6215
 synthesis of C₁-C₂, building blocks of amphotericin B using [2,3]Wittig rearrangement, 5747
 synthesis of *cis*-3,4-diaryl-isochroman-1-ones via diastereoselective reaction of benzaldehydes and α -lithio-2-cyanodiarylmethane intermediates, 3777
 synthesis of polyether antibiotic salinomycin, crucial role of 4-methoxybenzyl protecting group for OH functions, 5143
 synthesis of spirocyclic alkaloid (+)-nitramine, 6493

Stereoisomerism
 inside-outside-, of *trans*-bicyclo[4.3.1]decan-10-one 4691

Stereoselection and synthesis
 [2,3] sigmatropic rearrangement and intermolecular generation of allylic oxonium ylides, 5119
 2,4-*cis* and 2,4-*trans* tetrahydrofuran derivs via mono- or dichloromethyl radical by radical cyclisation, 321
 3-substituted Δ^1 -carapenes via N-C3 closure via Ag-mediated cyclisations of 4-allynyl- and 4-(2-propynyl)azetidiones, 4253
 7 α -allyl- and 7 α -propyl-steroids, 1533
 13-*cis*-retinoic acid via titanium induced reductive elimination, 209
 α -amino acids and N-Boc- α -amino alcohols, 1265
 alkylation of chiral glycine enolate synthons, enantioselective synthesis of α -amino acid derivs, 6079
 alkylation of chiral imide enolates to give optically active α -alkylsuccinates, 6257
 amino-hydroxylation of double bond of 7-oxabicyclo[2.2.1]hept-5-en-2-yl derivs, remote substituent participation in acid catalysed

- decomp of aziridines and triazolines, 3695
and rate changes by hydrophobic solvents and by bovine serum albumin in Diels-Alder reactions of 1,4-naphthoquinone derivs with dienes, 3347
and regiocontrolled synthesis of indole alkaloid yuehchukene, 2993
and regioselective formation of silyl enol ethers via oxidation of vinyl anions, 4269
and regioselective oxidative cyclisation of cycloalkenols, substituent directed with ceric ammonium nitrate, 1771
and regioselective Pd-catalysed functionalisation of dienes, synthesis of (\pm)-sativene, 5973
and regioselective prep of silyl enol ethers by alkylation of silyl esters, 1065
and regioselective synthesis and regioselective synthesis of substituted piperidones, 5115
aphidicolin from its degradation product, 3,18-
isopropylidenedioxy-17-noraphidicolan-16-one, 2793
bis(tetrahydrofuran) moiety (C-1 to C-9) of mycotoxin (+)-astelotoxin from *Aspergillus stellatus*, 655
C(8)-C(20) fragment of premonensin B, 2357
C-C bond formation in carbohydrates by radical cyclisations, 6585
cembranoides via cyclisation of homochiral (α -alkoxyallyl)-stannane precursor, 3899
chiral pheromone epoxides via alkylative epoxide rearrangement, 865
conjugate additions of sulphoxide stabilised carbanions to α,β -unsaturated esters, 5821
conjugated dienones, 1045
conjugated isobutylamides via arsonium salts, new synthesis of pellitorine, 3949
construction of 20(S)-steroid side chain via application of methylation and hydroxy-methylation involving free radicals, 4001
conversion of aldehydes into β -bromovinylloxiranes mediated by CrCl₃, 6107
cyanohydrin-forming reactions of chiral α -amino aldehydes, 3295
cycloaddition and bridging of cyclooctatetraene dianion, 2809
cyclobutylamines, substituted, via [2+2] cycloadditions of ketenium ions and alkenes, 4309
cyclopentadienyl sulphone, 4197
deoxygenation of 6-aryl-6-hydroxy-1,2,3,5,6,10b-hexahydropyrrolo[2,1-a]isoquinolines with borane-THF in trifluoroacetic acid; stereocontrolled proton transfer in an enantiomeric-iminium rearrangement, 5073
(E)- α,β -unsaturated acids from C₆O₂-tri(trimethylsilyl)ketene acetal and aldehydes, 4551
E-11-hexadecen-1-ol acetate, pure trans pheromones from acylsilane/yliide chemistry, 2777
(\pm)-erythro- and threo- γ -hydroxynorvaline, 1627
erythronolide A segments based on acyclic stereocontrol, 2219
glycosidation of activated glycols with C1-oxygenated allylsilane, synthesis of cis-pyrano[2,3-b]pyran, 4517
glycosylation of ceramide derivs, approach via use of pivaloyl group as stereocontrolling auxiliary, 4097
glycosylation of N-acetyl-neuraminic acid aided by a phenylthio substituent as stereocontrolling auxiliary, 3987
glycosylation, dimeric Lc^x antigen, 111^vFuc, Nlc₄Cer:pivaloyl as auxiliary for, 5267
horse liver alcohol dehydrogenase catalysed oxidoreduction of organometallic meso diol and corresponding dialdehyde, 5769
hydroxy-substituted tetrahydrofurans, 2011
in [2,3]Wittig rearrangement, of isopropyl [(2E)-1-(benzyl-oxoalkyl)-2-butenyl]oxyacetate, prep of potent building blocks for synthesis of polyoxo compds, 4763
intramolecular bromo-etherification, enantiomeric synthesis of polysubstituted furans, 3149
intramolecular Diels-Alder reaction of D-xylose triene deriv, 481
isomerisation of α,β -ynones to (E,E)- α,β,δ -dienones, 1045
new anticapsin, 191
new approach to aldol products, in mild oxidation of 1,1-diorganometallics to aldehydes and ketones, 6697
new entry into syn- β -hydroxy- α -amino acids, 3125
new, of (Z)- α,β -disubstituted acrylates, 659
new, of spiro ketal subunit of milbemycins, 2819
octahydronaphthalene subunit of kijanolid and tetronolide, 3541
of directed aldol reactions of 3-nitro-2-methoxybenzaldehydes, effect of amine employed as base, 2247
of electrophilic substitution of 10-lithio-ergolinyl-urea, effect of reaction conditions, 6429
prep and reactions of 23-ketones, transformations of S541 factors A-D, 2595
prep of intermediate ethyl (R)-2-hydroxy-4-phenylbutyrate in synthesis of converting enzyme inhibitors, 423
reduction of β -alkoxy ketones, synthesis of syn-1,3-diols, 5419
reduction of prochiral ketones and imines by chiral 1,4-dihydropyridine (NADH-mimic), 5617
ring opening of 3-substituted cyclopropenes, and intermolecular trapping of derived vinylcarbenes, 6149
route to alkenyl sulphides, Pd-catalysed cross-coupling reaction of 1-bromo-1-phenylthioethene or (E-or(Z)-2-bromo-1-phenylthio-1-alkenes with 9-alkyl-9-BBN, 3983
route to N-methyl-2,3-cis-disubstituted piperidines, 3993
second generation-, of (-)-paspaline, 2791
selective-, of new solvent derived products, ozonolysis of 1-acetoxy- and 1-chloro-2,3-diphenylindene, 3375
sphingosine, a protein kinase inhibitor, 3037
Strecker synthesis, reversal of asymmetric induction using galactosyl amine as chiral matrix, 4397
syn-addition of monosubstituted diazomethanes to cis-3,4-disubstituted cyclobutenes, 6601
synthesis of 15-deoxybruceolide, precursor of bruceantin, 5953
synthesis of 22R-hydroxy-23-carboxylate steroid side-chain, by application Lewis acid-promoted ene reaction with glyoxylates, 6305
synthesis of (\pm)-estrone and (\pm)-adrenosterone, 4959
synthesis of (+)-solenopsin A, formation of substituted piperidines via rearrangement of imine-epoxide, 4977
synthesis of β -2,7,11-cembratriene-4,6-diol, tumour inhibitory constituent of tobacco smoke, 4913
synthesis of cis-chrysanthemic acid from 2,2-dimethylidenedone, 6157
synthesis of key intermediate, (\pm)-Ireland alcohol for tirandamycin A, 5285
synthesis of meso-triterpene ether, taurilene via linking two tetrahydrofurans by V⁺-catalysed oxidation of C₁₀-tetraenetetraol deriv, 5947
synthesis of Z-allyltrimethylsilanes via modified Seyferth-Wittig reagent, [2-(trimethylsilyl)-ethylidene]tris(2-methyl-phenyl)phosphorane, 5965
total synthesis of 3'-azido-3'-deoxythymidine and 3'-azido-2',3'-dideoxyuridine, from D-mannitol, 5349
(\pm)-tetraoprine-8, 1691
(\pm)-threo- γ -hydroxy- β -lysine lactone, 3793
trans-amino- β -lactams from zinc enolates of trisubstituted alkenes via Ni-catalysed coupling of Grignard reagents with 6-alkyl-3,4-dihydro-2H-pyrans, 2353
vitamin A and all trans retinoic acid via titanium induced reductive elimination, 213
Z-1,2-dialkylvinylsilanes from acylsilane/yliide chemistry, 2425
syn-1,3-polyols, 5423
- Stereospecific synthesis**
(1E,3E)- and (1E,3E)-1-trimethylsilyl-1,3-dienes via sequential cross coupling, 3705
(4R)-4-[(E)-2-butenyl]-4,4-dimethyl-L-threonine, 2069
 Δ -7(7a) 4a- β H isotocomanine, 643
and regio-specific class 2 tandem Michael addition-cycloaddition reactions of oximes, 4323
and regio-specific ring expansion of optically active cyclopropylvinylcarbinols, diastereoselective synthesis of cis Quercus-lactone b, 1537
both [E]- and [Z]-1,2-disubstituted vinyl bromides, 21
(-)-carboxylic 2',3'-dideoxythymidine a potential anti-aid agent, 2681
construction of fused butyrolactones with three contiguous asymmetric centers via dyotropic rearrangement, 1747
conversion of central chirality into axial chirality in dehydrogenase, NAD(P)⁺-NAD(P)H model for chemical evolution, 3079
conversion of homochiral α -alkoxystannanes to cembranoid precursors, 1657
conversion of nitro alkanes into amines via transfer hydrogenation, 5733

- desulphinylation of sulphanylaziridines with EtMgBr, synthesis of (\pm)-N-arylaziridines, 4093
- enzyme inhibitory 1-thioalkyl-2-acylamino-deoxy-sn-glycero-3-phosphocholines, 31
- (\pm)-fluorobotryodiploin, 2325
- fused carbocyclic systems via Ireland reaction, 1371
- group transfer from organotin reagents, regioselective Pd-catalysed tandem cyclisation-anion capture processes, 5565
- paramycin-607, C₁₁-C₁₁, portion, synthesis via stereoselective oxymercuration of γ -siloxyallene and a stereospecific Mg-MeOH reduction, 5505a0104
- radical cyclisation of 2',3'-O-isopropylideneuridine and -adenosine 5'-aldehyde, to 6,5'-cyclohydrouridine and 8,5'-cycloadenosine derivs, 75
- reactions, to form antipodal forms of β -lactams, 1649
- stereospecifically labelled (3S)- and (3R)-[3-³H]abequose, 4221
- Steric effects**
- control, Fauson cycloaddition, dicobalthexacarbonyl complexes of internal alkynes, reaction with olefins to give cyclopentenones, 999
- crowded alkyl sulphonates, S_N2-substitution in diacetone glucose system, 455
- large requirements of trialkylborohydrides, prep. purification of sodium and potassium hydrides, 3197
- steric vs electronic effects, use for mechanistic information on stepwise electrophilic additions with 3-membered cyclic intermediates, 6207
- TONG, intermolecular CT-interaction with monocyclic glycol ether carrying two terminal electron-donor groups, effect of potassium perchlorate, 933
- Steroids and sterols**
- 3-oxygenated estra-1,3,5(10)-trienes, regioselective functionalisation at C-1 via (n-arene)Cr(CO)₃ complexes, 3223
- 3 β -(hydroxymethyl)-A-nor-5 α -cholest-15-ene in *Phakellia arvensis*, 4081
- 7 α -allyl- and 7 α -propyl-, stereoselective synthesis, 1533
- 11-oxa-, 6-functionalised, synthesis via intramolecular cycloaddition of isobenzofurans, 2045
- 13 α -methyl 14 α -hydroxy steroid, one-step construction via new anionic polycyclisation, 6033
- 18-membered ring steroidalariat ethers and lipophilic [2.2.2]-cryptand, aggregation behaviour, 4065
- 20(S)-sterol side chain, stereoselective construction via application of methylation and hydroxymethylation involving free radicals, 4001
- 22 β -hydroxy-23-carboxylate steroid Side-chain, stereoselective synthesis by application diastereocontrol via Lewis acid-promoted ene reaction with glyoxylates, 6305
- carbon-15 of-, selective functionalisation with 6 β -(3'-benzoylphenyl)acetoxy group, 339
- cyclopropene sterols in *Calyx nicaeensis*, experimental biosynthetic interconversion, 6051
- C/D ring synthon of-, new entry via sequential Claisen-ene approach to carbocyclisation, 5277
- ergostane glycosides, new class from *Tubocapsicum anomalum*, 673
- ergosterol B-isomers, regiocontrolled synthesis, 1581
- estra-1,3,5-(10)-trienes, 3-alkylated, novel route, 1135
- (\pm)-estrone and (\pm)-adrenosterone, stereoselective synthesis, 4959
- (\pm)-estrone, shorter route, 2985
- hippasterol, trihydroxylated 5,6-secosterol from *Hippospongia communis*, 5999
- mevinic acid analogs, alternative approach from methyl (3R)-3-hydroxy-5-hexanoate, extension to rational syntheses of (+)- (6R)-goniotalamin and its non-natural (-)-(6S)-enantiomer, 4625
- ring-A-, new aromatisation, synthesis of estrone, 79
- synthesis of-, enantioselective prep of key[ABC] intermediates via asymmetric Michael addition involving chiral imines, 4427
- Strain**
- new bridgehead olefin, 3,4:7,8:9,10-tribenzobicyclo-[4.2.2]deca-1,3,7,9-tetraene, 2329
- new olefin with high unsaturation, tribenzotricyclo-[5.3.0.0⁰,"]deca-2,5,7,9-tetraene, 2333
- Structure-activity relationship**
- peptide antibiotic nisin, total synthesis, 795
- trans- and cis- α -(carboxycyclopropyl)glycines, synthesis as L-glutamate analogs with neurobiological activity, 1181
- Substituent effects**
- 2-methylene and 2-oxo-, π -conjugative effect on stability of carbocations in solvolysis of bicyclic bridgehead derivs, 873
- [2.2.2]metacyclophanes, syn to anti isomerisation, two pathways depending on internal substituents, relative sizes of H and F substituents, synthesis of dihydroxyrene with internal F substituents, 3287
- 4-alkyl-, rate retardation, neutral electron demand Diels-Alder reactions of 2-(3-butenyl)-1,2-dihydropyridines, 3187
- directed oxidation with ceric ammonium nitrate, regio- and stereoselective cyclisation of cycloalkenols, 1771
- effect on rate enhancements of intramolecular Diels-Alder reactions, reasons for gem-dimethyl effect, 2429
- Me-, on regioselective photoisomerisation of pentaenals, 853
- N-t-Bu group on cycloaddition of nitrones, and reaction of hydroxylamines with methyl propiolate, 307
- on photochemistry of α -tolualdehydes, 5559
- p-, effect on conformation of 2-aryloxytetrahydropyrans, 471
- perfluoroalkyl ether peroxy radicals, rate constants for self reactions, comparison with rate constants for non fluorinated analogs, 5557
- remote ligand-, effect of on premature β -H elimination in cobaloxime-mediated radical alkyl-alkenyl cross coupling, 6037
- remote-, participation in acid catalysed decomp of aziridines and triazolines, stereoselective amino-hydroxylation of double bond of 7-oxabicyclo[2.2.1]hept-5-en-2-yl derivs, 3695
- substituent-directed oxidation competition in prep of α -chloroketones by oxychlorination of alkenes with chlorochromate reagents, 6707
- through-space effects on stability of 1-bicyclo[3.1.1]heptyl cation, 1299
- trifluoromethyl group, effect on methylenecyclopropane rearrangement, 6839
- Substitution reactions**
- 1-methylpyrrole, reaction with N-haloimides, effect of halogen, 2405
- 7-oxabicyclo[2.2.1]hept-5-en-2-yl derivs, stereoselective amino-hydroxylation of double bond, remote substituent participation in acid catalysed decomp of aziridines and triazolines, 3695
- acetylenedicarboxaldehyde monoacetal, reaction with electrophilic alkenes and alkynes to give Diels-Alder and pendo-Michael addition substitutions, 1025
- alkyl iodides, reduction by LAH supports polar S_N2 mechanism, a quantitative analysis of "mechanistic probe" studies, 3451
- allylic-, and Michael addition, competition between, in reaction with carbanions a nitriles, 1713
- anchoring-, effect on rate of an intramolecular Diels-Alder reaction with furan-diene, 2493
- direct-, of 2-benzenesulphonyl cyclic ethers using organo-Zn reagents, 4869
- electrophilic-, and ortho-selective metalation of benzylamine derivs, 4277
- electrophilic-, of 10-lithio-ergolinyl-urea, effect of reaction conditions on stereoselectivity, 6429
- electrophilic-, of lithiated ergolines, 6425
- haloynes, regioselective synthesis from bromo[3]cumulenes, 411
- homolytic-, of 2-methylquinoline by crown ethers, 5037
- nucleophilic-, of α -allenic alcohols via Murahashi method, synthesis of 1,3-dienes, 1701
- nucleophilic-, of α -carbonyl derivs, multiple Hammett study, 4431
- silyl-substituted allylic carbonates and vinyl epoxide, Pd-catalysed regioselective reaction, 343
- S_N2-, of sterically crowded alkyl sulphonates in diacetone glucose system, 455
- S_N1 mechanism, photostimulated reaction of aryl iodides with 2-naphthoxide ions, 3429
- S_N1 reaction of gem-nitro imidazolyl alkanes, nitro group replacement by nitronates to give imidazoles with t-alkyl chain on position 1, 2567

- $S_{RN}1$ reactions, use of phenoxide and naphthoxide ions as nucleophiles for synthesis of biphenyl and phenyl-naphthyl derivs, 1289
- unsymmetrical binaphthyl derivs via coupling of idonaphthalenes with naphthoxide ions under $S_{RN}1$ conditions, 1705
- Sulphonic acid and derivatives**
methanesulphenyl fluoride, electrophilic anti-addition to alkenes, 2311
sulphenyl chlorides, prep via thioacetates, 2865
- Sulphides**
1,2,3-butatriene episulphides, new aspects of tautomerism, 5161
 β -hydroxyphenyl-, formation via β -keto phenyl-, synthesis via alkynes, 2381
 γ -alkoxyallyl-, thiostannane-mediated prep; β -alkylation of α,β -unsaturated aldehydes, 2979
acyclic α -lithiated-, diastereoselective reactions, thermodynamic control, 2547
alkenyl-, via stereoselective route, Pd-catalysed cross-coupling reaction of 1-bromo-1-phenylthioethene or (E-or(Z)-2-bromo-1-phenylthio-1-alkenes with 9-alkyl-9-BBN, 3983
allylic-, and selenides, synthesis by Lewis acid mediated displacement reactions of sulphones, 6787
allylic-, with 1-phenyltetrazole-5-thio group, prep from allylic alcohols using S_2S' -bis(1-phenyl-1H-tetrazol-5-yl) dithiocarbonate and reactions involving allylic sulphides, 4105
efficient oxidation to sulphoxides using new sulphinylperoxy intermediate generated from 2-nitrobenzenesulphinyl chloride and superoxide, 6453
sodium-, selective reduction of aromatic/aliphatic nitro groups, 635
- Sulphilides**
allylic-, and phosphinimines, contrasting thermal reactions, 5353
- Sulphinolides**
4-(2'-alkenesulphinyl)-morpholines by reaction of 4-morpholine-sulphenyl chloride with allylic alcohols, 3251
4-(2'-alkenesulphinyl)-morpholines, conversion into sulphinate esters, unsymmetrical bisallylic sulphones and olefins, isolation of some functionalised 2-alkenesulphinic acids, 3255
- Sulphinic acid and derivatives**
sulphinate esters, unsymmetrical bisallylic sulphones and olefins via conversion of 4-(2'-alkenesulphinyl)-morpholines, isolation of some functionalised 2-alkenesulphinic acids, 3255
- Sulphinyl compounds**
N-alkyl-N-sulphinyl dienophiles, Lewis acid and high press promoted Diels-Alder cycloadditions, 4233
optically active α -sulphinyl-acetaldehyde, synthesis, 6775
optically active p-tolyl sulphinyl group as chiral auxiliary, use in synthesis of chiral epoxides and allylic alcohols, 2851
- Sulphonamides**
diazadibenzo-30-crown-10 di-, solid state structure, 1575
N-(aminoalkylacetyl)-, alkyl and aryl substituted, prep, 1653
- Sulphones**
21-chloromethyl-allyl phenyl-, cyclocondensation with cyclopentenones to give methylene-bicyclo-[3.3.0]octanones, 201
alkyl phenyl-, ortho lithiation of Li-salts, $^{13}C/^{1}H$ NMR study, 1529
allyl-, doubly lithiated, synthesis of exocyclic alkenes, new route to optically active carba-prostacyclins, 781
[(allyloxy)methyl]-, synthesis and reactions; equivalent for [2,3]-Wittig rearrangement of nonconjugated sec carbanions, 5233
bisallylic-, unsymmetrical, and olefins via conversion of 4-(2'-alkenesulphinyl)-morpholines, isolation of some functionalised 2-alkenesulphinic acids, 3255
cyclopentadienyl-, synthesis and stereoselective chemistry, 4197
Lewis acid mediated displacement reactions, synthesis of allylic sulphides and selenides, 6787
metalated alkylaryl-, reaction with α,β -epoxysilanes, approach to allylic alcohols, 2497
vinyl-, intramolecular cycloaddition of oximes, 2417
- Sulphonic acid and derivatives**
alkyl sulphonates, sterically crowded, $S_{N}2$ -substitution in diaetone glucose system, 455
aminoiminomethane-, and prim amines, prep of monosubstituted guanidines, 3183
- Sulphonium salts**
allyl-, via ene-type reaction of "activated sulphoxide" with non-activated olefin and counter-ion dependent(1,2)- vs [3,2] rearrangement of ylide generated from the sulphonium salt, 6637
- Sulphonyl compounds**
2-(phenylsulphonyl)-1,3-dienes via selenosulphonation of 1,3-dienes, 1485
2-benzenesulphonyl cyclic ethers, direct substitution, use of organo-Zn reagents, 4869
2-benzenesulphonyl derivs, prep of cyclic ether acetals, new mild glycosidation, 4873
 α -, carbanions, open chain, configuration, X-ray crystal structure of [(phenylsulphonyl)isopropyl]lithium-diglyme], and [(α -phenylsulphonyl)- α (methyl)benzyl]lithium-diglyme], 1259
an-sulphonyl and N-phosphinoyl imines, direct prep via aromatic aldehydes, 3725
phenyl(tolylsulphonyl)acetylene, reaction with dienes and homo-dienes, cycloaddition vs fragmentation-addition, 831
sulphonyl substituted trienes, intramolecular Diels-Alder reactions, 6369
- Sulphoxides**
 β -keto-, new synthesis of thioflavones, 1845
"activated sulphoxide", ene-type reaction with non-activated olefin to give allylsulphonium salt and counter-ion dependent(1,2)- vs [3,2] rearrangement of ylide generated from the sulphonium salt, 6637
allylic and vinylic-, reactions with Grignard reagents, retention of geometric configuration of allylic and vinylic groups; ligand coupling through α -sulphurane, 4445
benzyllyl aryl-, reactions with benzylic Grignard reagents, sensitive nature of ligand coupling and pseudorotation to electronic effect of substituent-ligand coupling, 4441
chiral (E) and (Z) vinyl-, conjugate addition of amines, enantioconvergent and kinetic process, 2089
chiral vinyl-, with stereogenic center at allyl-C, conjugate addition to internal nucleophile, "intramolecular" double asymmetric induction, 3121
dimethyl-, activated by dichlorophosphate or phosphorus oxychloride, use in synthesis of β -chloroalkyl sulphides, 5467
dimethyl-, and trichloromethyl chloroformate, oxidation of alcohols, 6619
eudistamin K-, antiviral from *Ritterella sigillinoides*, 2255
R-(*)-ethynyl p-tolyl-, reaction with cyclopentadiene to give separable diastereoisomers, 2923
stabilised carbanions of-, stereoselective conjugate additions to α,β -unsaturated esters, 5821
via efficient oxidation of sulphides using new sulphinylperoxy intermediate generated from 2-nitrobenzenesulphinyl chloride and superoxide, 6453
- Sulphur compounds**
dithia-analog of stearic acid, microbial dehydrogenation, 285
ketene-S,S-acetals as 1,3-dipolarophiles, reactivity towards electron deficient azides, 6475
methyl thiostearates, oxidation as a function of S-position using *Saccharomyces cerevisiae*, 435
S-nucleophiles, reactivity towards arenediazonium tetrafluoroborates in aprotic solvents, synthesis of S-aryl thioacetates, 4185
sulphur dioxide, effect on Mannich reactions of phenols, 5801
sulphur-assisted O-carbonylation of alcohols with CO in presence of DBU, 4767
- Sulphur halogen compounds**
1-chloroalkyl p-tolylsulphoxides, prep in optically active form, prep and short synthesis of optically active disphurane, 313
4-morpholinesulphenyl chloride, reaction with allylic alcohols, prep of 4-(2'-alkenesulphinyl)-morpholines, 3251
5'-fluoro-5'-S-aryl(alkyl)-thionucleosides from adenosine, synthesis of new class, fluorination at C5' of nucleosides, 5729
 α -fluoromethyl-N-methyl-phenylsulphoximine, new fluoromethylation reagent, 3365
 α -fluoroalkanes, reduction to fluoroalkanes, 6851
 β -chloroalkyl sulphides,

- synthesis using dimethylsulphoxide activated by dichlorophosphate or phosphorus oxychloride, 5467
- efficient oxidation of sulphides to sulphoxides using new sulphinyloxy intermediate generated from 2-nitrobenzenesulphonyl chloride and superoxide, 6453
- methanesulphenyl fluoride, electrophilic anti-addition to alkenes, 2311
- vinyl trifluorosulphonates, use in carbopalladation of allenic hydrocarbons, 4089
- Sultams**
- N-enoyl-bornane-10,2-, stable and reactive conformations in absence of Lewis acids, asymmetric 1,4-hydride additions, 3559
- Oppolzer's chiral-, cycloaddition with nitrile oxides, model for asymmetric induction in non Lewis acid catalysed reactions of Oppolzer's chiral sultam, 3555
- Tautomerism**
- 3H-phosphaallene - alkynyl-1H-phosphane, 463
- and generation and cycloadditions, of N-acyl mucronones, 2027
- ring-chain-, in thiazolidine system, direct NMR proof, 5427
- Tellurium and compounds**
- 4-hydroxymethyltellurophenes, 2-substituted, prep from acetylenic epichlorohydrins and sodium telluride, 4923
- amidotellurinylation induced formation of 2-oxazolines from alkenes, 1049
- di(tetrathiafulvalene)-telluride[(TF)₂Te], prep and structure, 6177
- organic tellurides, role as accumulators and exchangers of carbon radicals, 6581
- phenyltellurinylation, conversion of allylsilanes to allylamines, 4949
- sodium hydrogen telluride, reaction with imines, mechanism, 2571
- telluramine derivs as selective oxidants, 2671
- tellurides R¹-Te-R², Pd conversion into coupled R¹-R² and metallic tellurium, C-C bond synthesis, 3533
- Terpenoids**
- bisnorditerpene, cytotoxic salviolone with benzotropolone chromophore from *Salvia miltiorrhiza*, 4603
- bulnesol, synthesis via ring expansion of cyclopentanones to 7-membered rings, 1733
- diterpenoid (+)-taxodione, synthesis from (-)-abietic acid, 5751
- diterpenoid erigerol and diastereoisomers, synthesis, 6479
- diterpenoids aldehyde (+)-peridial, synthesis and absolute structure, 4591
- diterpenoids, (-)- and (+)-sanadaol, total synthesis, absolute configuration of sanadaol and dietylidal, 5945
- diterpenoids, 8-2,7,11-cembratriene-4,6-diol, tumour inhibitory constituent of tobacco smoke, stereoselective synthesis, 4913
- diterpenoids, C-19 alkaloid from *Delphinium barbeyi*, structure of barbelline, 2397
- diterpenoids, C-19 lycocotonine-type alkaloid with C-6a oxygen function, structure of pubescenine, 2723
- diterpenoids, indole tremorgens, unified synthetic strategy, 2787
- diterpenoids, indole, stereocontrolled second generation synthesis of (-)-paspaline, 2791
- diterpenoids, new C₂-acetoacetylated, isolation of antheilolide A and B from *Anthelia glauca*, 1605
- diterpenoids, new C-17 methylated trinervitene skeleton from *Hospitalitermes umbrinus*, isolation and NMR studies, 113
- diterpenoids, new marine including unique hydroperoxide from coral of genus *Pseudopterogorgia*, 4361
- diterpenoids, oxepans, zoapatanol synthesis, 2867
- diterpenoids, phytohormones, synthesis of antheridic acid from gibberellin A, 3339
- diterpenoids, products with cyclopropane ring and strobane skeleton from Al-catalysed rearrangement of tosyl esters of pimaric and isopimaric series, 1695
- diterpenoids, pseudopterane lactone kallolide, synthesis of possible precursor via [2,3] Wittig ring contraction of macrocyclic furan diether, 741
- diterpenoids, quinonemethide, bharangin from *Pygmaecopremna herbasca*, 245
- diterpenoids, seco-ent-neoclerodane cardiophyllidin from *Salvia cardiophylla*, 363
- diterpenoids, stereocontrolled synthesis of aphidicolin from its degradation product, 3,18-isopropylodenedioxy-17-noraphidicolan-16-one, 2793
- diterpenoids, novel 6,7-cyclolabdane from *Cuytia richardiana*, 3627
- Eliel's camphor template, use in asymmetric synthesis via heteroconjugative addition, 4773
- forskolin, approach via efficient synthesis of a tricyclic lactone intermediate, 4039
- (±)-forskolin, formation via cuprate addition to a synthetic dihydropyran-4-one, 2031
- forskolin, total synthesis, enantioselective route to key intermediate, 6409
- furanoid bisnorditerpenoid, malabarolide from *Tinospora malabarica*, 4241
- furanomonoterpene, (±)-evodone synthesis, 4995
- meso-triterpene ether, teurilene, stereoselective synthesis via linking two tetrahydrofurans by V⁵⁺ catalysed oxidation of C₂-tetraenetetraol deriv, 5947
- monoterpene indole alkaloid and an iridoid, construction of elegansamine a new class of indole alkaloid, 5395
- monoterpenoids, (-)-verbenalol and (-)-epiverbenalol, total synthesis, 611
- monoterpenoids, acyclic alcohols, regioselective hydroxylation by *Aspergillus niger*, 579
- new bicyclic C19 terpenoid, xestenone from *Xestospongia vanilla*, 4357
- pimarane skeleton via organomercurial intermediates in biomimetic cyclisation of communic acids, 3713
- saiconin studies, construction of cis-fused trimane unit and synthesis of isosiconin methyl ether, 6721
- sesquiterpene (±)-sativene synthesis, 5973
- sesquiterpene lactones, total synthesis of (±)-12-noralliaolide, (±)-alliaol A and (±)-alliaolide, 5735
- sesquiterpenoids, 68-acetoxyeudesmanes, transformation by *Curvularia lunata* yielded 12- or 13-hydroxy derivs, 4471
- sesquiterpenoids, (±)-androlactone a spiro-Y-butyrolactone, via radical cyclisation route, 6487
- sesquiterpenoids, (+)-modhene, enantioselective synthesis via diastereoselective cyclopropanation, 2147
- sesquiterpenoids, agelasidine A, synthesis, 4957
- sesquiterpenoids, anisatin-like lactones from *Illicium majus*, 1165
- sesquiterpenoids, antileukemic lactone, synthesis of racemic eriolanin, 3829
- sesquiterpenoids, asarfoetidin and feroocidin from *Ferula asafoetida*, 1557
- sesquiterpenoids, biomimetic germacrene-humulene rearrangement, 1829
- sesquiterpenoids, fungitoxic (±)-chokol A, synthesis, 1207
- sesquiterpenoids, pseudo-guaianolide lactones confertin and helenalin, synthesis via boron annulation, 521
- sesquiterpenoids, pseudo-guanolides, enantioselective approach to chiral intermediates, 147
- sesquiterpenoids, sterpurene, formation via enzymic cyclisation, absolute stereochemistry, 4337
- sesquiterpenoids, synthesis of diastereomeric (±)-α-bisabolols and (±)-chlorphenoxamine, use of organo-Mn reagent, 3659
- sesquiterpenoids, trichothecenes calonectrin and deosynivalenol, partial syntheses, 493
- sesquiterpenoids, zizaane, new route, synthesis of (±)-isokhusimone, 4369
- sesquiterperoxide nardosinon, prep from 1(10)-aristolone-(9), 4703
- synthesis by baker's yeast, prep of chiral building blocks, reduction of S-functionalised prenyl derivs, 2197
- tetranortriterpenoids, synthesis of polyoxygenated decalin with limonoid structural homology common to salanin and azadirachtin, 1853
- tetranortriterpenoids, azadirachtin, conversion to azadirachtinin skeleton, 1849
- tetranortriterpenoids, azadirachtin, reactions of C-22-23 enol ether double bond and conversion to 22,23-dihydro-23-β-methoxyazadirachtin, antifedants from *Azadirachta indica*, 5433
- tricyclic sesterterpenes, synthetic studies on opihobolins, 4909
- trinorsesquiterpenoid, total

- synthesis of (\pm)-trior-anastreptene, 5169
- triterpene anhydride of celastracene, structure of celastranhydride, 109
- triterpene lactones of Lupane series, prep and CD studies, 5807
- triterpene quinone-methides, two new compds from *Cassine balaë*, revised structure of balaenonol, 387
- triterpenoids, (+)-thyriferol and (+)-venustatriol, total syntheses, 1143
- triterpenoids, synthesis of 25-oxygenated D:A-friedooleananes from D:A-friedoolean-7 β -ol, 6971
- triterpenoids, trichadenic acid B, constituent of *Phyllanthus flexuosus*, revised structure, 4751
- Z-jasnone and dihydrojasnone, synthesis by application of new route to 1,4-ketoaldehydes and 1,4-diketones, 3587
- Tetrazines**
- 1,2,4,5-tetrazinedicarboxylates, reaction with t-butylphosphathyme to give 1,2 λ^3 ,3 λ^3 -azadiphosphole, 5867
- dimethyl 1,2,4,5-tetrazine-3,6-dicarboxylate, reaction with 2-vinylindole to form new indolyl-1,4-dihydropyridazines and annelated pyridazines, 3927
- Thallium and compounds**
- nitrate of-, reaction with glycol benzyl ethers, synthesis of showdomycin analogs, 1841
- Theoretical calculations**
- 4,5-didehydropyrimidine, reactivity and electronic structure, 1687
- analysis and stereochemical predictions on transannular Diels-Alder reaction of isomeric macrocyclic trienes, 1639
- and ^{13}C NMR results, ground-state of double bond of anti-sesquinorbornene ether pyramidal with low barrier to inversion or planar, 19
- aromaticity, absolute hardness as a measure, 4843
- ^{13}C NMR analysis of homoconjugative orbital interactions of syn-sesquinorbornatriene alkylidene derivs, 4213
- device for synthetic allostery, torsional entropy as co-operator, 5021
- evaluation of stereoelectronic diastereofacial selectivity in cuprate addition to 5-substituted cyclopentenones, 443
- MM2-, intramolecular [2+2] cycloaddition approach to [7]-prismane analogs, 1613
- MM2-, new application and limitation of oxide-olefin cycloadditions in formation of fused rings possessing functionality in angular Me group, 715
- nitrodiazoacetic acid, synthesis, reactivity and structure, 6031
- perturbational evaluation, transition state of Diels-Alder reaction of butadiene and ethylene, 4699
- succinic acid deriv, conformation by double ^{13}C -labelling, 757
- Thermochemistry**
- [1,3]-O-to C migration in exocyclic vinyl ethers derived from quinols, prep of spirodienones, 3441
- automerisation of acenaphthalene, benzenoid ring contractions, 6857
- comparison of thermal and transition metal complex promoted rearrangements of trans-bicyclo[4.1.0]hept-3-ene derivs, 4803
- contrasting thermal reactions of allylic sulphinilines and phosphinimines, 5353
- flash vacuum thermolysis of 2-bromoethanol, formation of α -bromoethylethers via 1-bromoethanol, 6489
- flash vacuum thermolysis of non-volatile compds, 2171
- nitrous acid decomposition of nitroalkanes, elimination path, 2805
- or photo-electrocyclic rearrangement of α -vinyl imidates under non-acidic conditions, synthesis of substituted quinolines, 3517
- pyrolysis, flash vacuum, of 1-allylbenzotriazoles and dihydrobenzoxazines, formation of quinolines, 953
- pyrolysis, low pressure flow-, of trimethylsilylpropargyl ethers, prep of trimethylsilyllallenes, 609
- pyrolysis of 8-methyl-1,2-dihydrocyclobutal λ 1naphthalene-1,2-dione and formation of acenaphthalene, 6861
- pyrolysis of tetraphenylphthalic anhydride, formation of 1,2,3-triphenylbenzopentalene, 6791
- reactions of aldehydes with δ -alkoxyallylstannanes, diastereoface selectivity, 2479
- rearrangements of oxazole endoperoxides, fragmentations and methanol additions, 1007
- thermochemiluminescent label, prep, properties and use of xanthenylideneadamantane 1,2-dioxetane, 3137
- thermodynamic control in diastereoselective reactions of acyclic α -lithiated sulphide, 2547
- thermodynamics and solid state structures, correlation in N,N-bis(substituted)-4,13-diaza-18-crown-6 derivs with π -donor group sidearms, 3025
- thermolysis of benzhydrazones in presence of Cu, 811
- Thiadiazolines**
- tetra-, and tetraselenafulvalene, unsymmetrically substituted radical cation salts, synthesis and characterisation, 2185
- Thiaphospholes**
- 1,2,4 λ^3 -thiaazaphosphole, 1,2 λ^3 ,4 λ^3 -thiadiphosphole and 1,2 λ^3 -thiaphosphole via [3+2] and [4+2] cycloadditions with phosphalkenes, 4535
- Thiazanes**
- 1,4-, conformationally restricted analogs of peptido-leukotrienes, 6533
- Thiazines**
- 1,3-6H-, lactamisation and formylation via oxidative ring opening of 2-pyrazolines, 6249
- Thiazoles**
- 4-t-butylidimethylsilyloxy-, substituted, one-pot synthesis, 3765
- and imidazole metabolites from *Aplydium pliciferum*, 1099
- formation during rearrangement of penicillin sulphoxide, 3179
- Thiazolidines**
- thiazolidine system, ring-chain tautomerism, direct NMR proof, 5427
- Thiazolium salts**
- γ -cyclodextrin-, holoenzyme mimic for benzoin condensation, 1635
- bridged-, synthesis and structure, look up 1323
- catalysed α -ketoacid decarboxylation, novel enzyme mimic, 6235
- Thiiranes**
- one pot synthesis from alkenes and catalytic desulphurisation, 4177
- Thioalkanes**
- Triazolidines
- Thioalkenes**
- 1-bromo-1-phenylthioethene or (E- or Z)-2-bromo-1-phenylthio-1-alkenes, Pd-catalysed cross-coupling reaction with 9-alkyl-9-BBN, stereoselective route to alkenyl sulphides, 3983
- Thioaryl compds**
- 9-thiomethylphenanthrene, insertion of dichlorocarbene into C_{Ar}-S bond, 5877
- Thiocarbonyl compounds**
- α -halo S-phenyl thioesters, prep of precursors, 1-phenylsulphonyl-1-phenylthio epoxides, 4889
- α -oxoketene dithioacetals, cycloaromatisation with lithiumacetoneitrile, route to 4-substituted and 4,5-annelated pyridines, 6633
- α -phenylthio- α , β -unsaturated oxazolines, conjugate additions with thioesters, synthesis of 3,4-disubstituted coumarins, 5901
- alkoxythiocarbonyl free radicals, intramolecular addition to acetylenes, synthesis of lactones, 6127
- asymmetric dithioacetals via reaction of aldehydes and ketones with one equiv each of thiols and thioacetic acid, 6729
- chiral dithioacetals via reaction of aldehydes with one equiv each of thiol and chiral thioacid, 6733
- dithiocarbonates, reduction with n-Bu₃SnH-Et₃B, access to hydrocarbons from sec alcohols, 6125
- N-hydroxyppyridine-2-thione esters free radicals, EPR detection, 917
- phenylthioacetals, reaction with allylsilanes in presence of AlCl₃, 6175
- S-(4-alkenyl)-dithiocarbonates as mechanistic probes, use in Barton-McCombie radical deoxygenation, 5805
- S-aryl thioacetates, synthesis, reactivity of sulphur nucleophiles towards arenediazonium tetrafluoroborates in aprotic solvents, 4185
- thioacetals conversion to carbonyl

- comps, 5471
thioaldehydes in cycloadditions, synthesis of nuclear analogs of pyrazolidinone antibacterial agents, 5061
thioaldehydes, reactive, formation by vacuum gas-phase dehydrocyanation of thiocyanohydrins, MS/MS characterisation, 5899
thioamides, N-alkylation, 1755
thioamides, synthesis of difunctionalised enamines via thioiminium salts, 2299
thioamides, synthesis of monofunctionalised enamines and methyl ketone derivs via episulphides and thioiminium salt, 2295
thiocarbonates, synthesis, effect of N-donors on reactivity of copper aryloxides, 627
thioacetates, prep of sulphenyl chlorides, 2865
- Thiocyanates**
vacuum gas-phase dehydrocyanation, formation of reactive thioaldehydes, MS/MS characterisation, 5899
- Thioethers**
acid catalysed oxygen transfer from oxaziridine, 2817
allyl-, groups, intramolecular 1,3-dipolar cycloaddition with nitrones and reductive cleavage with desulphurisation, diastereoselective synthesis of α,γ -aminoalcohols, 5755
methylthiomethyl-, via conversion of alcohols, 3773
phospholipids of-, new approach, prep of enzyme inhibitory 1-thioalkyl-2-acylamino-deoxy- α -glycero-3-phosphocholines, 31
- Thioglycosides**
1-, synthesis via new approach, free radical addition of 1-thiosugars to alkenes, 4293
use in new method for O-glycosylation, benzeneselenenyl triflate as promoter of thioglycosides, 1061
- Thioiminium salts**
route to difunctionalised enamines from thioamides, 2299
- Thioketenes**
thiomethoxymethyleneketenes and methoxymethyleneketenes and syntheses and comparative reactivity, 5919
- Thio lactams**
 α -, new amidoalkylation using alkylzinc reagent, 5391
caprylcysteamine thiol ester, activated putative triene intermediate, total synthesis, monensin biosynthesis, 6357
- Thiophenes**
2,3-dihydro-2,3-bis-(methylene)-, generation and reactions, 117
2,3-dimethylene-2,3-dihydro-, formation and reactions, 2689
2,5-dimethylene-2,5-dihydrothiophene and thiophenoradialene, detection, 6239
3,4-di-t-butyl-, synthesis and reactions, 1161
stable thiophene-2,3-quinodimethane equivalents, pyrano[3,4-b]thiophen-5-ones, 5817
- Thiophosgene**
reaction with N-benzoylthio-(seleno)ureas to give N-[thio(seleno)carbonyl]-benzimidoylchlorides, 3475
- Thiophosphates**
acyclic and 6-ring thiophosphate esters, phosphorane intermediates in hydrolysis, 2081
analog of DL-myo-inositol 1-phosphate, synthesis, 3921
analog of DL-myo-inositol 1,2-cyclic phosphate, synthesis, 3919
- Thiophosphonium salts**
deoxynucleoside thiophosphoramidite intermediate, prep for synthesis of nucleoside phosphorodithioates, 6843
- Thiostranenes**
activation and synthetic applications, 3971
- Thiopyridines**
cyclo-, of unprotected nucleosides, prep of nucleoside-3',5'-cyclic phosphorothioates, 2803
- Thiosulphinates**
 α -oxoketene di-, cyclo-aromatisation in Reformatsky reaction, regioselective synthesis of substituted 2-hydroxy-6-methylthiobenzoates, 497
 α -oxoketene di-, with 3-methyl-5-lithiomethylisoxazoles, cycloaromatisation, new synthesis of substituted and annelated 1,2-benzisoxazoles, 501
bridged bis-fluorenoned-, intramolecular sulphur-dimerisation to bifluorenylidene-hinged crown ethers, 5131
ketene di-, S,S-dioxide, acceptor of 1-hydroxyalkyl- and 1-alkoxyalkyl-radicals, functionalising α -position of alcohols and ethers, 5387
mono-, and monoseleno-, reactivity towards oxidation, synthesis of substituted 2,3-dihydrofurans, 2179
- Thromboxanes**
B skeleton of-, via electrophile-initiated conversion of prostaglandin endoperoxide model compd, 4595
- Tin and compounds**
(2-trimethylsilylallyl)-triphenylstannane, radical reactions with alkyl halides, a neutral acetone enolate equivalent, 6969
 α -alkoxyallylstannanes, macrocyclisations, remote double stereodifferentiation, 4811
6-alkoxyallylstannanes, thermal reactions with aldehydes, diastereoface selectivity, 2479
acetal stannanes, prep and use for synthesis of 6- and 7-membered rings, 685
alkynyltin compds, Pd-catalysed coupling with N-substituted isocyanide dichlorides, new synthesis of dialkynylketones, 5379
alkynyltin reagents, regio- and chemo-selective addition to 2-position of 3-acylpyridines activated by methyl chloroformate, synthesis of 2,3-disubstituted 1,2-dihydropyridines, 1785
bis(tributyltin) oxide, cleavage of esters, application to deprotection of PCM penicillanate esters, 6893
C-Sn bond, interaction with β -positive charge, 2551
chiral α -alkoxy-ketone/SnCl₄ chelate, X-ray analysis, 5881
chiral tin enolates, diastereoselective alkylation onto cyclic acyliminium species, asymmetric total synthesis of (-)-supinidine, 6133
containing macrocycles, small exclusive host for fluoride ion, 4261
homochiral (α -alkoxyallyl)stannane precursor, cyclisation, stereoselective synthesis of cambranolides, 3899
homochiral α -alkoxy-stannanes, synthesis and stereospecific conversion to cambranolide precursors, 1657
hydrostannation of alkynes and hydrostannolysis of propargyl or propargyloxy carbonyl derivs of functional groups, Pd-catalysis, 619
mediated Pd-catalysed regiocontrolled alkylations of vinyl epoxides, 2931
organotin reagents, stereospecific group transfer, regiospecific Pd-catalysed tandem cyclisation-anion capture processes, 5565
stannyl cuprates, coupling of vinyl and aryl triflates providing regioselective access to vinyl lithiums, 4795
trans-1,2-bis(tri-n-butylstannyl)ethylene, Pd-catalysed coupling with aromatic halides, synthesis of substituted trans-8-bromostyrenes, 2783
tributyltin hydride, induced radical additions of azobisisobutyronitrile, synthesis of higher carbon sugars, 2335
tributyltin hydride, intra- and intermolecular radical reactions, prep of 2,3-dihydrobenzofuran and 2,3-dihydroindole derivs, C-C bond formations, 4133
tributyltin hydride/AIBN, use in radical mediated intramolecular arylation, synthesis of steganone, 2987
unsaturated stannanes, Pd-catalysed coupling with cephalosporin derivs, new ligands for Pd chemistry, 5739
vinyl iodide-ethylstannane coupling, Pd-catalysed, synthesis of terbinafine, 1509
- Titanium and compounds**
and zirconium dienolates, syn selective aldol reactions, 1661
catalysed aldol-type condensation of silyl enol ethers with 2-arylaetaldehydes, polycyclic aromatic hydrocarbons, 3885
induced reductive elimination, stereoselective synthesis of 13-cis-retinoic acid, 209
induced reductive elimination, stereoselective synthesis of vitamin A and all trans retinoic acid, 213
mediated transesterification of phosphorous esters, 3327
presence in regiocontrolled functionalisation of 2,5-dimethyl-2,4-hexadiene into epoxy alcohols, 531

- reduced-, dehalogenation of fluorotrichloromethane, generation of chlorofluorocarbons, new synthesis of 1-chloro-1-fluorocyclopropanes, 6749
- TiCl₄, presence in reaction of 1-ethoxy-3-trimethylsilyl-1-propene with aliphatic aldehydes and acetals to give 2-formyl allyltrimethyl silanes and 2-formyl-3-alkoxyalkyl-trimethylsilanes, 4717
- Topology**
topology of vertices and edges of Mobius ladders, chemical, implications, 731
- Toxins**
1-methoxyanthine-6-one, synthesis, 2421
11-nortetrodotoxin-6(R)-ol and other tetrodotoxin derivs isolation from Fugu niphobles, 4127
aflatoxins B₁ and B₂, abbreviated synthesis, furo[2,3-b]benzofurans via aryl radical-induced cyclisation routes, 4685
allopmillitoxin alkaloids via ion-vinylsilane cyclisation, 6541
aphanorphine, tricyclic alkaloid from Aphanizomenon flos-aquae, 4381
argiotoxins 636,659 and 673 total synthesis, 6223
bisnorditerpene, cytotoxic salviolone with benzotropolone chromophore from Salvia miltiorrhiza, 4603
(±)-citroviral from Penicillium citreoviride, total synthesis, 711
cyclic peptide-, cyanogenosin-RR from Microcystis aeruginosa, structure, 11
cytotoxic cembranolid, absolute configurations, consideration of Mosher's method, 4731
dihydrotelocidin B-4, total synthesis, 6267
(±)-fluorobotryodiplodin, stereospecific synthesis, 2325
fungal-, epimonotheiodioxo-piperazine, isolation from Phoma lingam, 3471
histrionoctoxins, unsaturated, approach to side-chain via ethynylazaaspirocycloundecene synthesis, 2989
hormothamione from 2,3-dimethyl-5,6,7,8-tetramethoxy-chromone, 735
lethytotoxic diacylglycerols, umbraoulumin A and C, structures and isolation from Umbraoulum mediterraneum, 3613
macrocyclic bis(bibenzyl)ricardarin C, synthesis, 5039
muconaldehyde and 2-methylmuconaldehyde, synthesis of isomers, 5991
mycotoxin (+)-asteltoxin from Aspergillus stellatus, bis(tetrahydrofuran) moiety(C-1 to C-9), stereoselective synthesis, 655
phytotoxin bipolaroxin of fungal origin, synthesis of monocyclic analog, 1347
(±)-prosurugatoxin, synthesis and ring transformation into surugatoxin, 1547
(+)-solenopsis A, stereoselective synthesis,
spiro-benzoquinonefuran unit in styplidione, synthesis, 3857
tricothecine myco-, calonectrin and deoxymivenol, partial syntheses, 493
(-)-verruculogen TR-2, total synthesis, 1323
- Transannular reactions**
transannular Diels-Alder strategy, stereoccontrolled synthesis of a trans anti trans tricyclic, 6215
- Transfer reactions**
acid catalysed oxygen transfer from oxaziridine to a thioether, 2817
intracavity acetyl-, in water soluble cyclophane, synthesis and esterolytic behaviour of host enzyme model, 6047
intramolecular cyclisation of alkenyl radicals generated by 1,5-H-transfer to alkoxy radicals, 1441
methyl isocyanide reagent, synthesis of 2-thionaphthylmethyl isocyanide, 1435
oxaziridinium salt-, of oxygen to ethylenic derivs to give epoxides, 3941
properties of 12-silacrown-3 new type of anion complexing agent, 297
reductive, single electron transfer processes, application to generation and cyclisation of ω -unsaturated α -amino radicals, 6685
simple flow reaction for transfer hydrogenation in olefins, 5599
single electron-, in an electrochemical cell, an "all-organic battery", 1507
stereospecific group-, from organotin reagents, regioselective Pd-catalysed tandem cyclisation-anion capture processes, 5565
transamination, high yield synthesis of tertiary (amino) phosphines, 5983
- Transition metals**
"transition metal cations", specific transport by pyridino-armed diaza-crown ethers, 569
catalysed cross coupling, synthesis of azafluorenone alkaloids, 2135
Ti(O-*i*-Pr)₄, promoted formation of 5- and 6-membered lactams from prim and sec ω -amino acids, 3049
- Transition states**
cyclic-like-, stereochemical data support, asymmetric Michael addition involving chiral imines, 2667
- Transmetalation**
2-cyanoethylzinc iodide to Cu and Ti derivs which react with acyl chlorides, enones, allylic halides and benzaldehydes, 2395
"double"-, prep of 1,2-dimetalated 1,3-dienes, 3915
N-(trialkylstannyl)methylamines, new method for generation and cycloaddition of 2-azaallyl anions, 761
trans-, of 2-cyanoethylzinc iodide to Cu and Ti derivs which react with acyl chlorides, enones, allylic halides and benzaldehydes, 2395
trans-acetoxymercuration of diphenylacetylene, 4631
- Trapping reactions**
1,3-diyl and intermediate formed in deazetation of bicyclic diazenes, Arrhenius activation parameters, 5711
- active-, of uranyl ion via macrocyclic polycarboxylate-hydrophobic ammonium carriers, 1153
dioxygen-, lifetime determination of bicyclo[2.2.2]octa-2,5-diyl, nitrogen extrusion from 4,5-diaszatriocyclo[4.4.0.0],¹dec-4-ene by UV-laser photochemistry, 6605
intermolecular-, of vinylcarbenes derived from 3-substituted cyclopropanes by stereoselective ring opening, 6149
macrocyclic-based molecular bundle, synthesis, "chundle" approach to molecular channels, 3803
selective transport, Cu-mediated, of α -amino acids across bulk liquid membrane using chiral lipophilic ligand as carrier, 4967
specific-, of "transition metal cations" by pyridino-armed diaza-crown ethers, 569
- Triazines**
1,2,4-, condensed, new route to, cyclisation of 1,2,4-triazinium salts with bifunctional nucleophiles, 1431
N-hydroxymethyl-, synthesis of S-cysteinyl, S(N-acetylcysteinyl) and S-glutathionyl conjugates, 2707
- Triazinium salts**
1,2,4-, cyclisation with bifunctional nucleophiles, new route to condensed 1,2,4-triazines, 1431
- Triazinones**
cis cis-trialkyl-, photoelectron spectra and X-ray analysis, 185
- Triazolines**
4-phenyl-1,2,4-triazoline-3,5-dione, reaction with substituted indenes to give 1,2-addition products, 2769
7-oxabicyclo[2.2.1]hept-5-en-2-yl derivs, stereoselective amino-hydroxylation of double bond, remote substituent participation in acid catalysed decomp of aziridines and triazolines, 3695
N-methyltriazolidinedione, photo-Diels-Alder addition to phenanthrene, 5509
- Tricothecenes**
neosporol, synthesis, 1669
sporol, structure revision, 1665
- Trienes**
1-acetyl-1,3,5-cyclooctatrienes, prep via Diels-Alder and ring enlargement reactions of 1-cyclobutenyl ketones, 6283
1-phosphabuta-, and 4-hydroxy-1-phospha-1,2-butadienes, formation, 2935
1,2,3-butatriene episulphides, new aspects of tautomerism, 5161
5,10,12-(5E,10E,12E)-octadecaatrienic and 2,7,9-(2E,7E,9E)-pentadecaatrienic esters, intramolecular Diels-Alder reactions, 2685
7-alkyl-cycloheptatrienes, synthesis from allylic silanes and tropylium tetrafluoroborate, 5897
14-membered macrocyclic-, transannular Diels-Alder reaction, experimental results and synthetic potential, 1641
and diene diolates of unsaturated carboxylic acids, Ag-ion coupling, synthesis of octa- and

- dodeca-diendioic acids, 6181
 cyclohepta-, anodic transformation into tropone and tropolone, 555
 cyclohepta-, synthesis via Rh(II) acetate-catalysed intramolecular addition of N-benzylidiazacetamides, 2639
 D-xylose deriv of-, stereo-selectivity in intramolecular Diels-Alder reaction, 481
 macrocyclic-, isomeric, transannular Diels-Alder reaction, theoretical analysis and stereochemical predictions, 1639
 putative-, intermediate activated as caprylcysteamine thiol ester, total synthesis, biosynthesis of monensin, 6357
 syn-9-vinyl-bicyclo[6.1.0]nona-2,4,6-triene, sesquential thermal rearrangements to tetracycl[5.4.0.0²,1'0⁴,1⁸]jundec a-5,8-diene, 5249
 syn-sesquiorbornatriene, alkylidene derivs, ¹³C NMR and theoretical analysis of homoconjugative orbital interactions, 4213
 sulphonyl substituted, intramolecular Diels-Alder reactions, 6369
- Tropolones**
 1,11'-O-benzo[2]orthocyclo[2](4,5)tropolonophanes, synthesis and structure, 5961
 2-(2,3-diphenylcyclopropen-1-yl)-8-tropolone, intramolecular Diels-Alder reaction with inverse electron demand, construction of semibullvalene-type carbon skeleton, 4123
 tropone and tropolone via anodic transformation of cycloheptatriene, 555
 tropones, 2-substituted, synthesis via 2-halocycloheptadienone enolates, 4723
- Tungsten compounds**
 heteropoly-11-tungstates, use in oxidation of cyclohexene with H₂O₂, 823
- Ultra sound**
 application to N-methylation of diazacorons, 959
 optimisation of conjugate addition of alkyl groups to α-enones, 5369
 sonochemically generated radical anions, cyclisation of O-allyl benzamides, 2183
- Uranium compounds**
 uranyl ion, active transport via macrocyclic polycarboxylate-hydrophobic ammonium carriers, 1153
- Ureas**
 allyl-, and -amidines, iodocyclisations to give imidazolines and imidazolinones, 3001
 guanidines, monosubstituted, from prim amines and aminoimino-methanesulphonic acid, 3183
 N,N'-disubstituted-, synthesis from carbamates, 2525
 N-benzoylthio(seleno)-, reaction with thiophosgene to give N-[thio(seleno)carbamoyl]-benzimidoylchlorides, 3475
- Urethanes**
 vinyllogous-, derived from simple tetrionic acids,
- diastereoselective alkylation, 1489
- Uridines**
 2',3'-O-isopropylidene-, and -adenosine 5'-aldehyde, stereospecific radical cyclisation to 6,5'-cyclohydrouridine and 8,5'-cycloadenosine derivs, 75
 uridine 5'-diphosphate glucose, analogs, inhibition of glycolipid biosynthesis, 4893
- Vanadium and compounds**
 presence in regiocontrolled functionalisation of 2,5-dimethyl-2,4-hexadiene into epoxy alcohols, 531
- Vinylation**
 intramolecular-, and arylation, Pd-catalysed, synthesis of bicyclic and polycyclic alkenes, 2919
- Vitamins**
 1α,25-dihydroxyvitamin D₃, related dianynes, Pd-catalysed synthesis, 1203
 2-trifluoromethyl vitamin K analogs, prep, 5765
 13-cis-retinoic acid, stereoselective synthesis via titanium induced reductive elimination, 209
 28,28,28-trifluoro-, 26,26,26,27,27,27-hexafluoro- and 28-nor-26,26,26,27,27,27-hexafluoro-25-hydroxyvitamin D₃, prep, 227
 all-cis-retinal and 7-cis,11-cis-retinal, synthesis and properties, 419
 all-cis-retinal and 7-cis,11-cis-retinal, synthesis and properties, 419
 biotin, enantioselective synthesis, 57
 isocorbic acid, total synthesis of D-mycinoise, 5723
 previtamin D₂ and vitamin D₂, interconversion at high pressure, 3021
 (R)-carnitine, symmetric synthesis via hydrogenation of ethyl 4-chloro-3-oxobutanoate, 1555
 retinoid side chain, extreme twisting, 11-t-butyl retinoids by catalysed isomerisation of 8-allenic retinals, 1251
 vitamin A and all trans retinoic acid, stereoselective synthesis via titanium induced reductive elimination, 213
 vitamin B-12, photoelectro-catalysed addition of alkyl bromides and carboxylic anhydrides to methyl 2-acetamidoacrylate yields 2-amino esters, 1601
 vitamin D and related compds, enzymatic approach via potential chiral synthons, 6961
- X-Ray crystallography**
 2,2-bis(dimethylamino)biphenyl and its monohydrobromide, structures, 5629
 [2.2](2,5)pyrazinophanes, synthesis and molecular structure, 3655
 2,4,6,8-tetraazabarbaralanes, models for tetraazasemibullvalenes, 3639
 and photoelectron spectra of cis-cis-trialkyl-triaziridines, T85
- anomalous Wilmeler reaction, 3391
 bridged thiazolium salts, synthesis and structure, 1323
 C-19 diterpenoid alkaloid from *Delphinium barbeyi*, structure of barbelline, 2397
 cephalosporin-derived fungal metabolite, structures of AC107, 2101
 chiral α-alkoxy-ketone/SnCl₄ chelate, 5881
 crystal structure and absolute stereochemistry of eudistomin K, 4971
 di(tetrathiafulvalene)-talluride([TTF]₂Te), prep and structure, 6177
 dimers of 1-alkoxy-2-benzopyrylium-4-olates, structures, 317
 diphenylacetylene, trans-acetoxymercuration, 4631
 diterpenoids, seco-ent-neoclerodane cardiophyllidin from *Salvia cardiophylla*, 363
 diterpenoids, novel 6,7-cyclolabane from *Cuytia richardiana*, 3627
 Hantsch cyclisation of ethyl 4-chloro-2-benzylidene-acetoacetates with methyl 3-aminocrotonate to 2-chloromethylene-1,2,3,4-tetrahydropyridine-3,5-dicarboxylic ester, configuration at C₂-c., 6335
 itomanindoles A and B, methylsulphingylindoles from *Laurencia bronchiartii*, 6091
 molecular complex between a diazabenzocrown-10 deriv and diquat, solid state structure, 1573
 monoisopinocampheylborane-N,N,N',N'-tetramethyl-ethylenediamine complex, X-ray structure and asymmetric hydroboration, 3385
 new nucleoside antibiotic, structure of capuramycin, 2343
 nitrodiazoacetic acid, synthesis, reactivity and structure, 6031
 optically active multifunctional carbon compds, absolute configuration, 4727
 plumbazeylanone, revised structure, x0010
 prep and reactions of 23-ketones, transformations of S541 factors A-D, 2595
 reaction of trinitroanisole with 1,3-dicarbomethoxyacetone, structural analysis of product, 6757
 retinoic acid, reaction in sulphuric acid, 6279
 sesquiterpenes, anisatin-like lactones from *Illicium majus*, 1165
 solid state structure of diazabenzocrown-10 disulphonamide, 1575
 structure and isolation of intermediate dihydroxyimidazoline in synthesis of glycoic acid from glyoxal and urea, 1015
 structure of (+)-(1S,5R,1'S,5'R)-carvone pinacol, 5925
 structures and synthesis of cyclic sulphonium ylides, 6013
 triterpenes, trichadenic acid B, constituent of *Phyllanthus flexuosus*, revised structure, 4751
- Xanthanes**
 xanthate esters of 2° alcohols conversion to chlorides with retention of configuration, 3053

Xanthenes

- 2,5,8,11-tetra-*t*-butyl-*peri*-xanthenoxanthene, reversible electrochemical oxidation to its radical cation and dication, 4533
 xanthene carbinol or xanthyridene deriv., formic acid reduction to piperidylxanthene, 5701

Ylides

- 3-pyrrolidinium-, synthesis via [4+1]-annulation, 3041
 5-alkenyl- Δ -pyrrolidinium -, new pathway via reductive coupling of α,β -enone N,N-dimethylhydrazones or oximes promoted by TiCl₄-Mg complex, 3263
 acylsilane/ylide chemistry, stereoselective synthesis of Z-1,2-dialkylvinylsilanes, 2425
 allylic oxonium-, intermolecular generation and stereoselective [2,3] sigmatropic rearrangement, 5119
 azemethine-, from diethyl aminomalonate, 6649
 azomethine-, indolenine-derived, rapid entry to pyrrolo[1,2-*a*]indolines via [3+2] cycloadditions, 5325
 azomethine-, photo-generated, 1,3-dipolar cycloaddition, approach to 3,8-diazabicyclo-[3.2.1]octane moiety of bioactive alkaloids naphthyridinomycin and quincocarcin, 3525
 carbonyl and nitrile-, heats of formation by photoacoustic calorimetry, 2623
 cyclic sulphonium-, synthesis and rearrangement via rhodium carbenoid mediated cyclisations, 6009
 cyclic sulphonium-, synthesis and X-ray structures via rhodium carbenoid mediated cyclisations, 6013
 from reaction of *p*-substituted phenylchlorocarbenes with acetone, kinetics and spectroscopy, 3419

- lithiated aza-, prep and reaction with alkyl and acyl halides to give amino-phosphonium salts and amines, 3931
 mesionic carbonyl-, intramolecular [3+2] cycloadditions, 1677
 N-acyl munchnones, generation, cycloadditions and tautomerism, 2027
 N-H pyrrolidines, prep via intermolecular [3+2] cycloaddition between olefins and ylide generated from amine N-oxide designed to allow dealkylation of cycloadduct, 3481
 P-fluoro-, addition of aldehydes and ketones to give 2-fluorooxaphosphetanes that convert (depending on substituent at C-3 and C-4) into allylphosphonates or vinylphosphonates, 3663
 phosphonium-, mechanistic aspects of reaction with alkyl propynoates, 381
 stabilised phosphorus-, unusual reactions with lactols, specific intramolecular OH group effect leads to high selectivity, 6823

Yttrium and compounds

- dicyclopentadienylyttrium chloride, reaction with aldehydes and ketones, cleavage of C_p-Y π -bond, 6931

Zinc and compounds

- 1-bromoalkenylzincate, generation and alkylation, 3821
 2-cyanoethyl-, iodide, transmetalated to Cu and Ti derivs which react with acyl chlorides, enones, allylic halides and benzaldehydes, 2395
 alkyl-, iodides, addition to 1-(phenoxycarbonyl)2,3-dihydropyridinium salts, synthesis of 2-alkyl- Δ^3 -piperidines, 6711
 alkynyl-, reagent, use in new amidoalkynylation, application to α -thiolactams, 5391
 and tri-*n*-butylphosphine, promoted

- new method of C-C formation, 6119
 diamine zinc(II)monoalkoxides, mediated conjugate additions of Grignard reagents to α,β -unsaturated ketones 3593
 divinyl-, catalytic asymmetric addition to aldehydes, enantioselective synthesis of sec-allyl alcohols by N-extrusion from azoalkane, 5645
 enolates of-, of fluorine containing organo reagents, Reformatskii-type reactions of chlorodifluoroacetic acid derivs, 2943
 fluorine-containing organo reagents, synthesis, Reformatskii-Claissen reaction of chlorodifluoroacetic acid derivs, 3291
 iron and zinc bleomycin, direct comparison of oxygen transfer, 6413
 organo compds, selective addition to keto group of (-)-menthyl phenylglyoxalate to give (-)-menthyl mandelates, 2175
 organo reagents, Cu and Ni catalysed S_N2'- and S_N2-regioselective allylation, 5155
 organo reagents, use in direct substitution of 2-benzenesulphonyl cyclic ethers, 4869
 organo reagents, use in direct substitution of 2-benzenesulphonyl cyclic ethers, 4869
 presence in reactions of bromotrifluoromethane with acid derivs, 1029

Zirconium and compounds

- hydrozirconation-isocyanide insertion-hydrolysis of alkynes and alkenes, conversion into one-carbon homologated aldehydes, 1631

Zwitterions

- cyclic ketene acetals, reaction with phenyl isocyanate through zwitterion to yield spiro compds, 2327