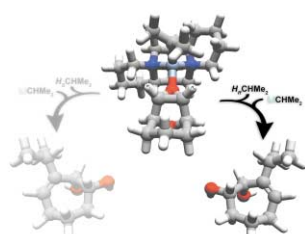


Organic & Biomolecular Chemistry

FORMERLY PERKIN TRANSACTIONS 1 AND 2

Incorporating Acta Chemica Scandinavica

**Cover**

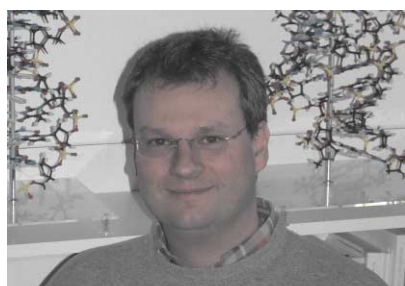
See D. M. Hodgson, M. A. H. Stent, B. Štefane and F. X. Wilson, page 1139

A representation of an achiral epoxide undergoing enantioselective alkylation double ring-opening, *via* a ternary (-)-sparteine-*i*PrLi-epoxide complex (image by K. Harrison).Chemical biology articles published in this journal also appear in the *Chemical Biology Virtual Journal*: www.rsc.org/chembiol

contents

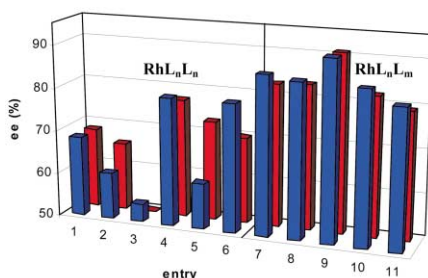
PROFILE

x xi

**Profile:** *Organic & Biomolecular Chemistry* profiles Professor Thomas Carell

COMMUNICATIONS

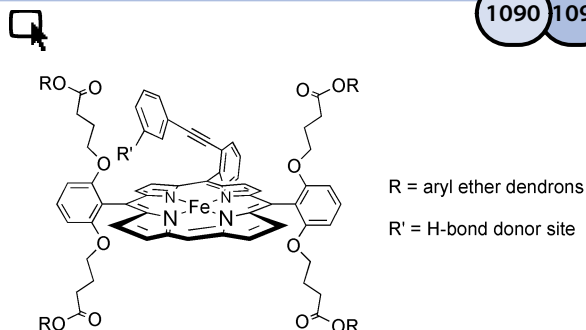
1087 1089

**Improving conversion and enantioselectivity in hydrogenation by combining different monodentate phosphoramidites; a new combinatorial approach in asymmetric catalysis**

Diego Peña, Adriaan J. Minnaard, Jeroen A. F. Boogers, André H. M. de Vries, Johannes G. de Vries and Ben L. Feringa

The combination of monodentate ligands in the rhodium-catalysed enantioselective hydrogenation enables a new approach when searching for the optimal activity and enantioselectivity in catalysis.

1090 1093

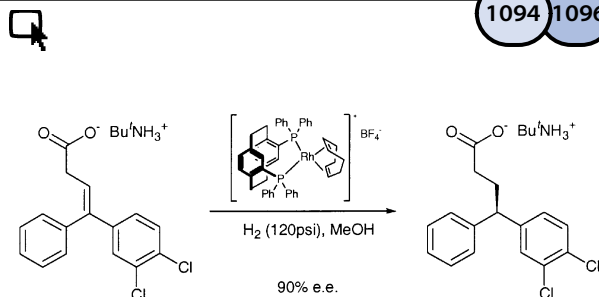


Dendritic metalloporphyrins with a *distal* H-bond donor as mimics of haemoglobin

Beatrice Felber, Carlos Calle, Paul Seiler, Arthur Schweiger and François Diederich

Dendritic iron(II) porphyrins featuring first- and second-generation aryl ether dendrons and different *distal* H-bonding ligands were prepared as model systems for haemoglobin.

1094 1096

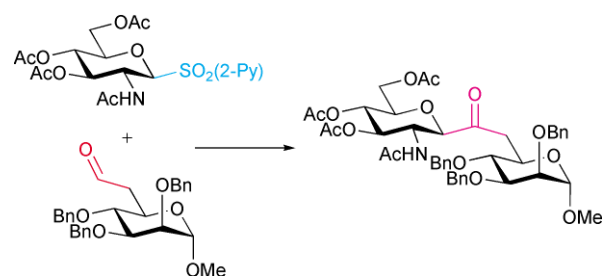


Asymmetric hydrogenation of a 4,4-diaryl-3-butenate; a novel approach to sertraline

Lee T. Boulton, Ian C. Lennon and Raymond McCague

The asymmetric hydrogenation of a selectively crystallised (*E*)-4,4-diaryl-3-butenate with a rhodium-PhanePhos catalyst is described, providing an intermediate to the antidepressant sertraline.

1097 1098

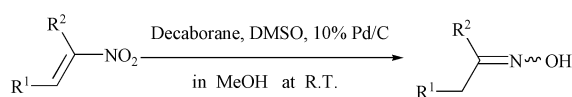


A highly selective route to β -C-glycosides *via* nonselective samarium iodide induced coupling reactions

Sara Palmier, Boris Vauzeilles and Jean-Marie Beau

Reductive samarium of acetylated glycopyranosyl 2-pyridyl sulfones in the presence of aldehydes, followed by an oxidation-isomerization sequence, provides the corresponding C-glycosyl compounds with high β -selectivity.

1099 1100



R¹ = aliphatic or aromatics
R² = H or CH₃
R¹ = R² = (CH₂)₄

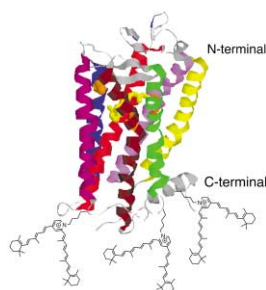
Catalytic transfer hydrogenation of conjugated nitroalkenes using decaborane: synthesis of oximes

Seung Hwan Lee, Yong June Park and Cheol Min Yoon

α,β -Unsaturated nitroalkenes are readily reduced to the corresponding aldoximes and ketoximes in good yields under mild reaction conditions.

ARTICLES

1101 1105

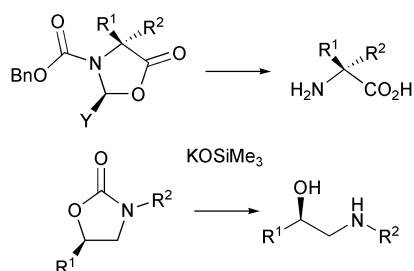


A2-Rhodopsin: a new fluorophore isolated from photoreceptor outer segments

Nathan Fishkin, Young-Pyo Jang, Yasuhiro Itagaki, Janet R. Sparrow and Koji Nakanishi

Elevated concentrations of all-*trans*-retinal in photoreceptor outer segments leads to the formation of A2-rhodopsin (A2-Rh), an unprecedented fluorescent rhodopsin adduct which consists of bisretinoids (A2) linked to each of three lysine residues in the protein and which exhibits an emission spectrum similar to A2E.

1106 1111

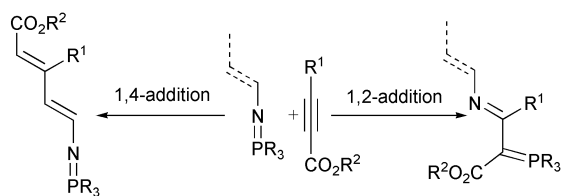


Potassium trimethylsilanolate induced cleavage of 1,3-oxazolidin-2- and 5-ones, and application to the synthesis of (*R*)-salmeterol

Diane M. Coe, Rossana Perciaccante and Panayiotis A. Procopiou

A convenient and efficient method for the cleavage of 1,3-oxazolidin-5-ones and 1,3-oxazolidin-2-ones utilising potassium trimethylsilanolate in tetrahydrofuran.

1112 1118

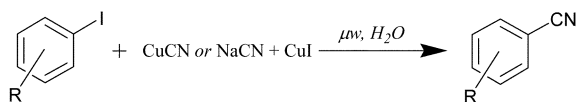


Reaction of acetylenic esters and *N*-functionalized phosphazenes. 1,2- versus 1,4-addition of *N*-vinyl phosphazenes

Francisco Palacios, Concepción Alonso, Jaione Pagalday, Ana María Ochoa de Retana and Gloria Rubiales

Phosphazenes derived from aminophosphonates and *N*-vinyl phosphazenes are synthetic intermediates for the preparation of conjugated phosphazenes and phosphorus ylides heterodienes, and heterocycles.

1119 1121

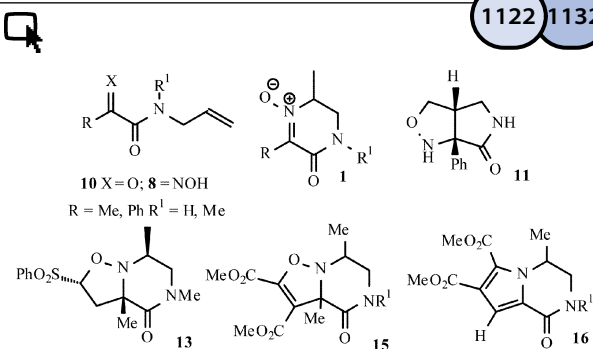


Rapid cyanation of aryl iodides in water using microwave promotion

Riina K. Arvela, Nicholas E. Leadbeater, Hanna M. Torenus and Heather Tye

Using water in conjunction with microwave heating it is possible to prepare aryl nitriles from aryl iodides rapidly and in high yield.

1122 1132

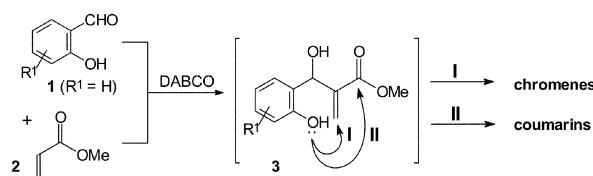


α-Keto amides as precursors to heterocycles—generation and cycloaddition reactions of piperazin-5-one nitrones

Frances Heaney, Julie Fenlon, Patrick McArdle and Desmond Cunningham

A range of heterocyclic compounds *viz* ketopiperazine *N*-oxides, **1**, isoxazopyrrolidinones, **11**, isoxazolidinone- **13** and isoxazoline- **15** fused piperazinones and pyrrolpiperazinones **16** with potential for biological interest have been prepared from α-ketoamides **10**.

1133 1138



Does the DABCO-catalysed reaction of 2-hydroxybenzaldehydes with methyl acrylate follow a Baylis–Hillman pathway?

Perry T. Kaye, Musiliyu A. Musa, Xolani W. Nocanda and Ross S. Robinson

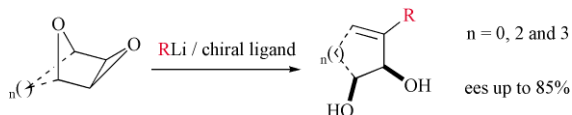
In the formation of chromene and coumarin derivatives from DABCO-catalysed reactions of 2-hydroxybenzaldehydes with methyl acrylate it appears that: i) the Baylis–Hillman reaction *precedes* conjugate addition or acyl substitution; and ii) the pivotal intermediates are, in fact, highly activated dipolar adducts rather than the Baylis–Hillman products *per se*.



1139 1150

Enantioselective alkylative double ring-opening of epoxides derived from cyclic allylic ethers: synthesis of enantioenriched unsaturated diols

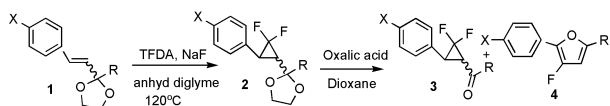
David M. Hodgson, Matthew A. H. Stent, Bogdan Štefane and Francis X. Wilson

Enantioenriched unsaturated diols arise from epoxides of 2,5-dihydrofuran and oxabicyclo[*n*.2.1]alkenes (*n* = 2, 3) by using organolithiums and chiral ligands.

1151 1156

A novel approach of cycloaddition of difluorocarbene to α,β -unsaturated aldehydes and ketones: synthesis of *gem*-difluorocyclopropyl ketones and 2-fluorofurans

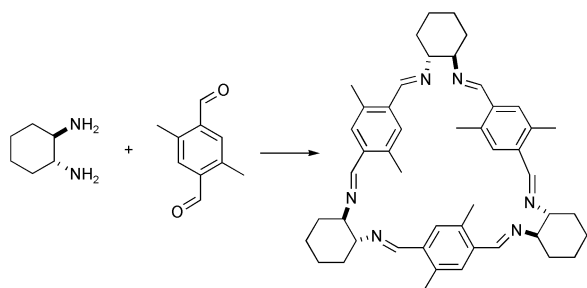
Wei Xu and Qing-Yun Chen

A series of *gem*-difluorocyclopropyl acetals and ketals are synthesized, which can be hydrolyzed to *gem*-difluorocyclopropyl ketones or 1-aryl-2-fluorofuran derivatives in the presence of oxalic acid.

1157 1170

The synthesis of trianglimines: on the scope and limitations of the [3 + 3] cyclocondensation reaction between (1*R*,2*R*)-diaminocyclohexane and aromatic dicarboxaldehydes

Nikolai Kuhnert, Giulia M. Rossignolo and Ana Lopez-Periago

The [3 + 3] cyclocondensation reaction with (1*R*,2*R*)-diaminocyclohexane and aromatic dicarboxaldehydes to give trianglimine macrocycles is discussed. The scope and limitations of the cyclocondensation reaction are studied and some comments on the properties of the novel macrocycles are made.

1171 1175

Reaction of hydroxyl radicals with *S*-nitrosothiols: determination of rate constants and end product analysis

Veleparambil M. Manoj and Charuvila T. Aravindakumar

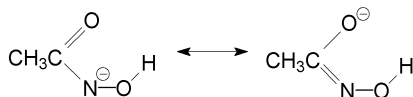
Evidence for the degradation of RSNOs induced by $\cdot\text{OH}$ is presented. The high rate constants obtained for this reaction indicate the probable involvement of $\cdot\text{OH}$ in the metabolism of *S*-nitrosothione and *S*-nitrosocysteine.

1176 1180

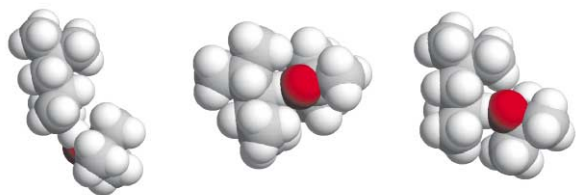
Acidity of hydroxamic acids and amides

Stanislav Böhm and Otto Exner

Hydroxamic acids are relatively strong acids due to the acidity of the NH hydrogen. Is it caused entirely by the resonance in the anion? In the case of carboxylic acids, the importance of resonance was recently questioned.



1181 1190

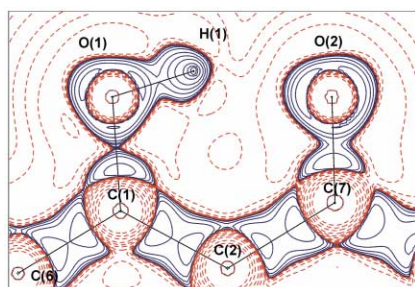


EPR and modelling studies of hydrogen-abstraction reactions relevant to polyolefin cross-linking and grafting chemistry

Susana Camara, Bruce C. Gilbert, Robert J. Meier, Martin van Duin and Adrian C. Whitwood

Calculated transition-state structures for H-abstraction from 2,4-dimethylpentane by *tert*-butoxy.

1191 1198

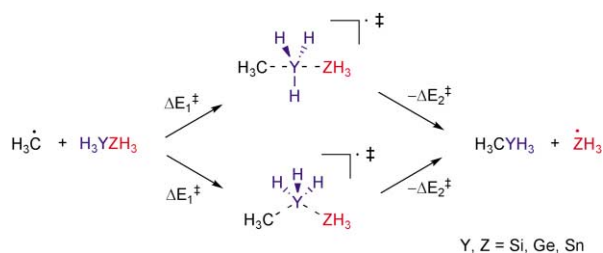


X–N Charge density analysis of the hydrogen bonding motif in 1-(2-hydroxy-5-nitrophenyl)ethanone

David E. Hibbs, Jacob Overgaard and Ross O. Piltz

Fine details of intra- and intermolecular bonding features are revealed, in particular the extent of the π -delocalisation throughout the molecule.

1199 1203

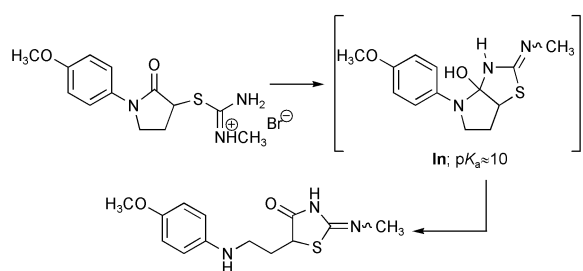


Methyl radical also reacts by the frontside mechanism: An *ab initio* study of some homolytic substitution reactions of methyl radical at silicon, germanium and tin

Hiroschi Matsubara, Sonia M. Horvat and Carl H. Schiesser

Homolytic substitution of methyl radical at silicon, germanium and tin can proceed *via* both backside and frontside attack mechanisms.

1204 1209

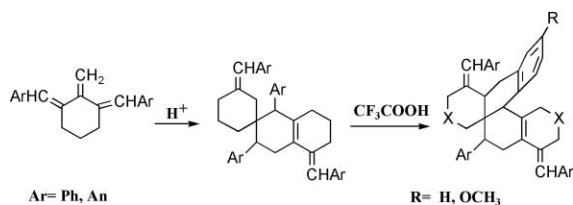


Kinetics and mechanism of ring transformation of *S*-[1-(4-methoxyphenyl)pyrrolidin-2-on-3-yl]isothiuronium bromide to 2-methylimino-5-[2-(4-methoxyphenylamino)ethyl]-thiazolidin-4-one

Miloš Sedlák, Jiří Hanusek, Ludmila Hejtmánková and Pavla Kašparová

The transformation reaction is subject to general base, general acid, and hydroxide-ion catalyses.

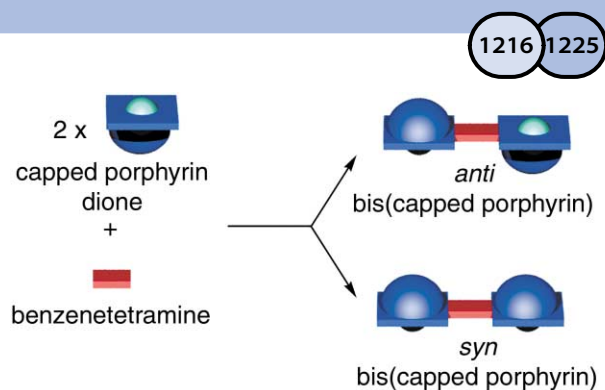
1210 1215



1,3-Bis(diarylmethylidene)-2-methylidenecyclohexanes in cycloaddition and cyclodimerization reactions. The role of stereoelectronic factors

Elena I. Klimova, Marcos Martínez García, Tatiana Klimova, S. Hernandez Ortega and Leon V. Bakinovskiy

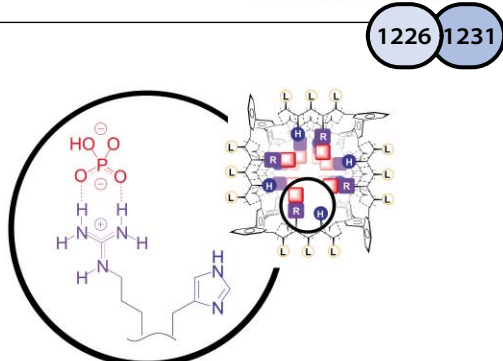
Cycloaddition and cyclodimerization of the diaryltrienes are studied. In the presence of CF₃COOH, a central, 'three-petal' fragment of six-membered rings is formed.



The synthesis and studies towards the self-replication of bis(capped porphyrins)

Pall Thordarson, Annie Marquis and Maxwell J. Crossley

The *syn*- and *anti*-bis(capped porphyrins) can catalyse their own formation but not by a self-replication pathway.



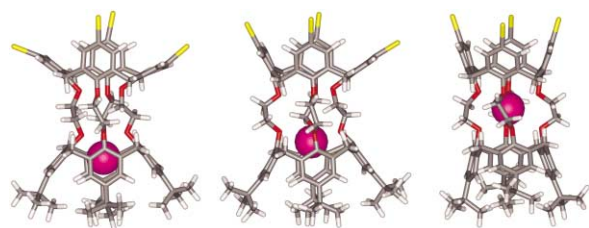
Synthetic multifunctional pores: deletion and inversion of anion/cation selectivity using pM and pH

Naomi Sakai, Nathalie Sordé, Gopal Das, Philippe Perrottet, David Gerard and Stefan Matile

Internal counterion immobilization is used to construct supramolecular pores with attractive properties such as superb stability and multifunctionality.



1232 1239



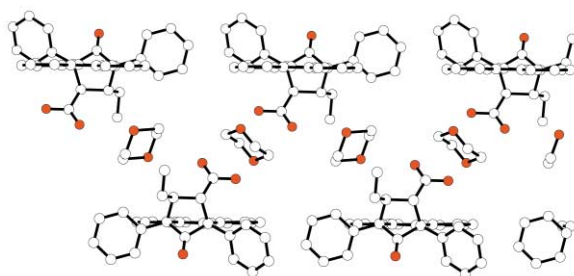
Halo-Derivatised Calix[4]tubes

Susan E. Matthews, Vitor Felix, Michael G. B. Drew and Paul D. Beer

Novel halo-derivatised calix[4]tubes exhibit exceptional selectivity for potassium as evidenced by NMR, ESMS and molecular modelling studies.



1240 1249



Carboxylic acid clathrate hosts of Diels–Alder adducts of phencyclone and 2-alkenoic acids. Role of bidentate C–H···O hydrogen bonds between the phenanthrene and carbonyl groups in host–host networks

Yasuyuki Yoshitake, Junichi Misaka, Masaki Abe, Masatoshi Yamasaki, Masashi Eto and Kazunobu Harano

The carboxylic acid hosts of the *endo* DA adducts of phencyclone and 2-alkenoic acids showed high inclusion ability for different types of guests.