

**Cover**

Electrostatically driven assembly of a donor-acceptor unit, namely, a ruthenium(II)-polypyridyl-C60 dyad, onto a modified ITO electrode, useful for energy conversion (pp 2517–2525).



Chemical biology articles published in this journal also appear in the *Chemical Biology Virtual Journal*: www.rsc.org/chembiol

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Chemical Technology
in this issue

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Chemical Technology

November 2004/Volume 1/Issue 1

www.rsc.org/chemicaltechnology

Chemical Technology highlights the latest applications and technological aspects of research across the chemical sciences.

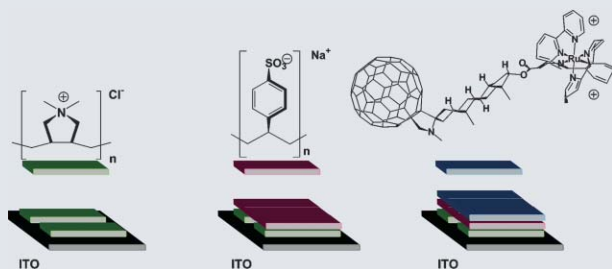
FEATURE ARTICLE

2517

Electrostatic interactions by design. Versatile methodology towards multifunctional assemblies/nanostructured electrodes

Dirk M. Guldi and Maurizio Prato

Multi-site interactions between positively or negatively charged carbon forms, such as fullerenes and single wall carbon nanotubes, and porphyrinic chromophores have been utilized *en route* to novel multifunctional and nanostructured materials. Specifically, (i) the behavior of molecular assemblies in homogeneous solutions and (ii) the controlled self-assembly on surfaces are discussed.



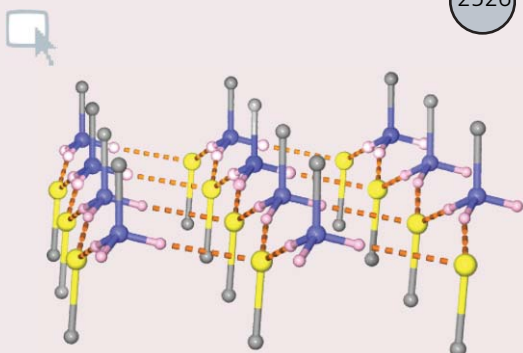
COMMUNICATIONS

2526

Proton transfer and $N^{(+)}-HS^{(-)}$ hydrogen bonds in the crystal structure of 4-aminothiophenol

Ram K. R. Jeti, Roland Boese,* Tejender S. Thakur, Venu R. Vangala and Gautam R. Desiraju*

Proton transfer from S to N results in strong $N^{(+)}-HS^{(-)}$ hydrogen bonds in a β -As type tetrahedral sheet structure for 4-ammonio-1-benzenethiolate).



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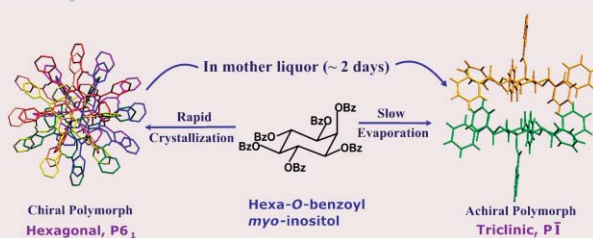


Crystal engineering in the aminophenols. Novel carborundum network in a supramolecular homologous series

Archan Dey, Gautam R. Desiraju,* Raju Mondal and Judith A. K. Howard*

An alternation of linear and bent molecules in these dianiline–diphenol adducts leads to the complex carborundum III network.

2530

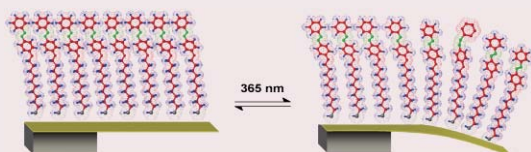


Capturing a metastable chiral polymorph of an achiral molecule—hexa-*O*-benzoyl-myoinositol

Rajesh G. Gonnade, Mohan M. Bhadbhade* and Mysore S. Shashidhar*

Spontaneously generated metastable chiral polymorph transforms *via* dissolution into a stable achiral one; formation of both the polymorphs are explained on the basis of different topologies of C–HO interactions.

2532

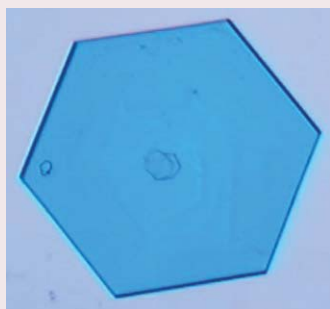


Photon-driven nanomechanical cyclic motion

Hai-Feng Ji,* Yu Feng, Xiaohe Xu, Vemana Purushotham, Thomas Thundat and Gilbert M. Brown

Microcantilevers modified by a monolayer of azobenzene molecules bend up and down periodically, switched by a 365 nm UV light, as a result of the conversion of the two configurations of azobenzene molecules in the monolayer.

2534

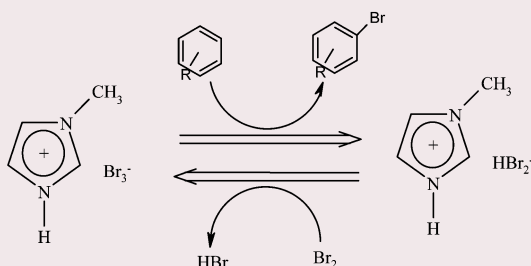


Sextuplet phenyl embrace in a metal–organic Kagomé lattice

John J. Perry, Gregory J. McManus and Michael J. Zaworotko*

A novel Kagomé lattice that demonstrates the modular nature of metal–organic networks has been prepared and is to our knowledge the first example of a metal–organic coordination polymer that incorporates the sextuplet phenyl embrace as a supramolecular synthon.

2536

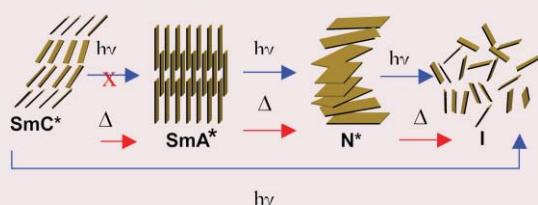


Highly efficient bromination of aromatic compounds using 3-methylimidazolium tribromide as reagent/solvent

Cinzia Chiappe,* Elsa Leandri and Daniela Pieraccini

3-Methylimidazolium tribromide proves to be an alternative highly efficient reagent/solvent for the halogenation of non-activated aromatic compounds.

2538

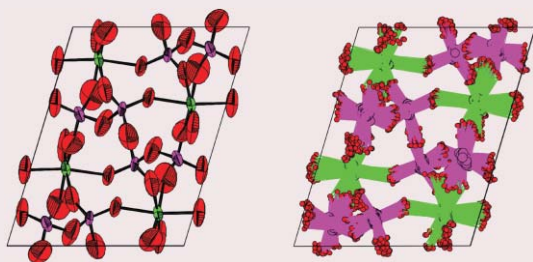


Photoactive dimesogen having different pathways of light driven phase transitions at different temperatures

V. Ajay Mallia and Nobuyuki Tamaoki*

We have demonstrated the light induced phase transitions in a photoresponsive dimesogen, which goes through different pathways at different temperatures.

2540

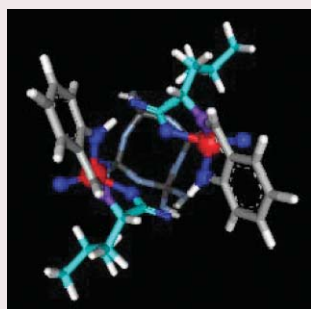


Mo₂P₄O₁₅ – the most complex oxide structure solved by single crystal methods?

Sarah E. Lister, Ivana Radosavljevic Evans, Judith A. K. Howard, Alan Coelho and John S. O. Evans*

We report the crystal structure and phase transitions of Mo₂P₄O₁₅. Despite a trivial stoichiometric formula this material has 441 crystallographically unique atoms and is the most complex commensurate extended oxide known.

2542

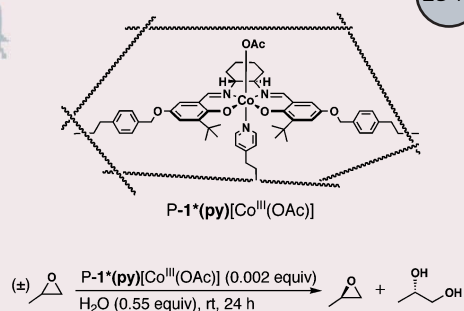


Chiral self-dimerization of vanadium complexes on a SiO₂ surface: the first heterogeneous catalyst for asymmetric 2-naphthol coupling

Mizuki Tada, Toshiaki Taniike, Lakshmi M. Kantam and Yasuhiro Iwasawa*

The chiral self-dimerization of vanadium monomers with Schiff-base ligands was found on a SiO₂ surface. The chiral V dimer promotes the oxidative coupling of 2-naphthol with 96% conversion, 100% selectivity to BINOL, and 90% enantioselectivity.

2544



Development of porous materials for heterogeneous catalysis: kinetic resolution of epoxides

Leilani L. Welbes, Robert C. Scarrow and A. S. Borovik*

New methodology was developed to create a range of porous materials, from a common template by varying the template : crosslinker ratio during polymerization, that would exhibit tunable function in the HKR of propylene oxide. Material function improved with increasing percentage of immobilized template while maintaining good selectivity.

2546

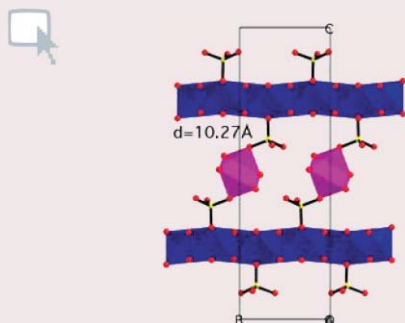


Carene terpenoids by gold-catalyzed cycloisomerization reactions

Alois Fürstner* and Peter Hannen

Terpene-derived propargyl acetates, on treatment with catalytic amounts of AuCl₃ in 1,2-dichloroethane, are stereospecifically converted into bicyclo[4.1.0]heptene derivatives, thereby providing entry into the carene family of natural products. This catalytic rearrangement constitutes a convenient and safe synthetic equivalent to the established intramolecular cyclopropanation of unsaturated α -diazoketones.

2548

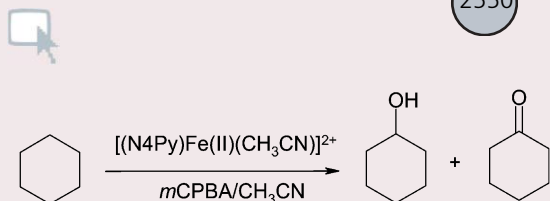


Co^{II}₅(OH)₆(SO₄)₂(H₂O)₄: the first ferromagnet based on a layered cobalt-hydroxide pillared by inorganic OSO₃-Co(H₂O)₄-O₃SO

Mohsen, Ben Salah, Serge Vilminot,* Mireille Richard-Plouet, Gilles André, Tahar Mhiri and Mohamedally Kurmoo

Co^{II}₅(OH)₆(SO₄)₂(H₂O)₄ is the first synthetic mineral, obtained by hydrothermal reaction of CoSO₄·7H₂O and NaOH, having brucite layers bridged by inorganic pillars, OSO₃-Co(H₂O)₄-O₃SO, and is a ferromagnet below 12 K.

2550

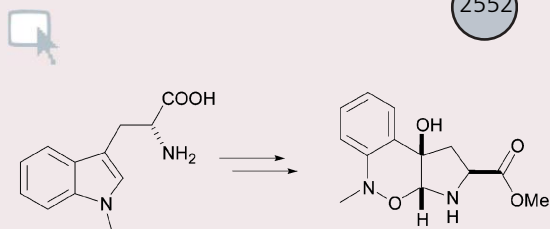


Enhanced selectivity in non-heme iron catalysed oxidation of alkanes with peracids: evidence for involvement of Fe(IV)=O species

Tieme A. van den Berg, Johannes W. de Boer, Wesley R. Browne, Gerard Roelfes and Ben L. Feringa*

Selectivity in the non-heme iron catalysed oxidation of alkanes is improved with the use of peracids: the critical role of high valent oxo species, molecular oxygen and hydroxyl radicals is investigated.

2552

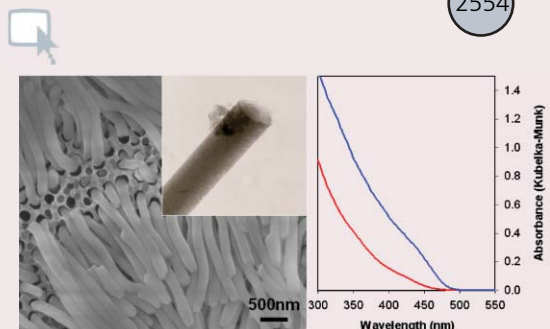


Biomimetic synthesis of the pyrrolobenzoxazine core of paeciloxazine

Dirk Schwaebisch, Kirill Tchabanenko, Robert M. Adlington, Andrew M. Cowley and Jack E. Baldwin*

The pyrrolobenzoxazine core of the novel antibiotic paeciloxazine can be synthesized in a short reaction sequence starting from L-tryptophan.

2554

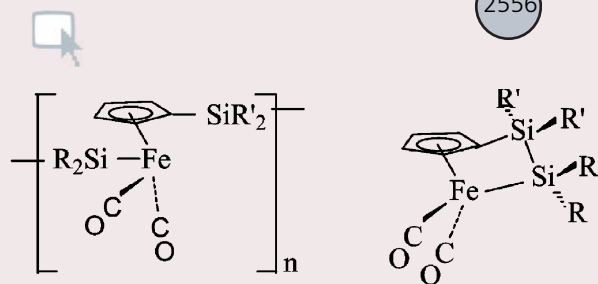


Hierarchically ordered CdS doped nanoporous membrane

Weon-Sik Chae, Sang-Wook Lee, Sung-Jae Im, Sik-Won Moon, Wang-Cheol Zin, Jin-Kyu Lee and Yong-Rok Kim*

Large-dimension (~5 cm²) heterogeneous nanoporous membranes were obtained by the formation of CdS doped mesoporous silica within the porous channels of alumina membranes, which present optical absorption corresponding to the CdS particles in the mesoporous networks.

2556

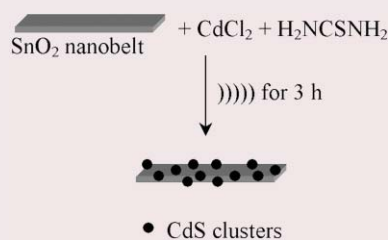


The substituent-dependent base-treatment chemistry of (η⁵-C₅H₅)Fe(CO)₂SiR₂SiR₂Cl: formation of 1,2-disila-3-metallacyclobutanes, their ring-opened polymers, migrations and substitutions

Hemant K. Sharma and Keith H. Pannell*

Disilametallacycles, high molecular weight polymers or simple substitution products are formed from the reactions of 1-(cyclopentadienyliron dicarbonyl)-2-chlorodisilanes with bases, LDA or *n*-BuLi.

2558

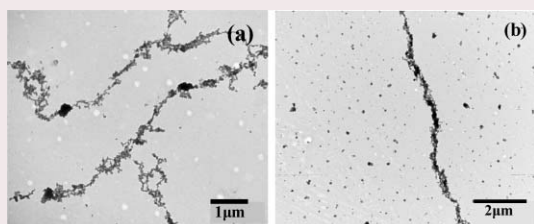


Sonochemical synthesis of SnO_2 nanobelt/CdS nanoparticle core/shell heterostructures

Tao Gao* and Taihong Wang

Ultrasonic irradiation of a mixture of SnO_2 nanobelts, cadmium chloride, and thiourea in an aqueous medium generates the core/shell-type SnO_2 nanobelt/CdS nanoparticle heterostructures.

2560

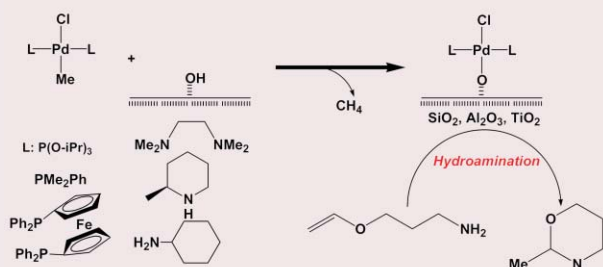


Magnetic nanoparticle assemblies on denatured DNA show unusual magnetic relaxivity and potential applications for MRI

Stephen J. Byrne, Serena A. Corr, Yurii K. Gun'ko,*
John M. Kelly,* Dermot F. Brougham* and
Swapankumar Ghosh

Denatured herring sperm DNA acts as a template for the preparation of magnetic nanowires, forming stable aqueous suspensions, which exhibit unprecedentedly high relaxivity at low field.

2562

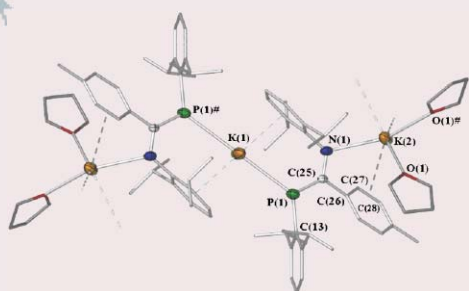


Oxide surface-promoted Pd-complex catalysis for intramolecular O-activated alkene hydroamination: catalyst preparation, characterization, and performance

Mizuki Tada, Michio Shimamoto, Takehiko Sasaki and
Yasuhiro Iwasawa*

Supported Pd-P and Pd-N complexes on SiO_2 , Al_2O_3 , and TiO_2 characterized by EXAFS, XPS, XRF, and gas analysis exhibited oxide surface-promoted catalysis for the intrahydroamination of 3-aminopropanol vinyl ether.

2564

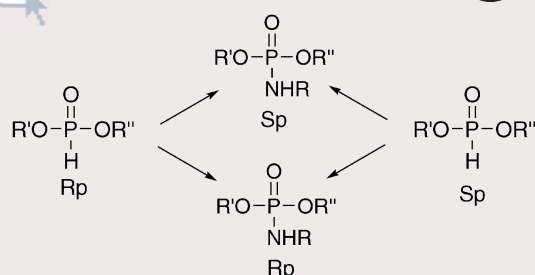


An *N,P*-disubstituted-2-aminophosphaalkene and lithium and potassium complexes of the deprotonated “phosphaamidinate” anion

René T. Boéré,* Marcus L. Cole, Peter C. Junk, Jason D. Masuda
and Gottfried Wolmershäuser

A direct route to phosphoalkenes bearing a secondary amine on the double-bond carbon is reported; upon metallation structural changes occur which are consistent with charge delocalization in the anion.

2566

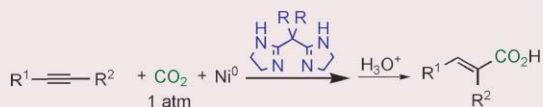


Controlling stereochemistry during oxidative coupling. Preparation of *Rp* or *Sp* phosphoramidates from one *P*-chiral precursor

Johan Nilsson and Jacek Stawinski*

A synthetic protocol based on H-phosphonate chemistry was developed that enables synthesis of *Rp* or *Sp* phosphoramidates from one *P*-chiral precursor.

2568

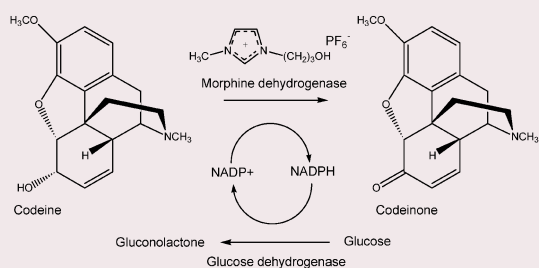


Bidentate amidine ligands for nickel(0)-mediated coupling of carbon dioxide with unsaturated hydrocarbons

Masao Aoki, Motomu Kaneko, Sawa Izumi, Kazutoshi Ukai and Nobuharu Iwasawa*

Novel bidentate amidines were designed and synthesized as easily available electron-donating N-ligands for Ni(0)-mediated coupling of carbon dioxide with alkynes or allenes. High regioselectivity was achieved for the carboxylation of aryl substituted internal alkynes.

2570

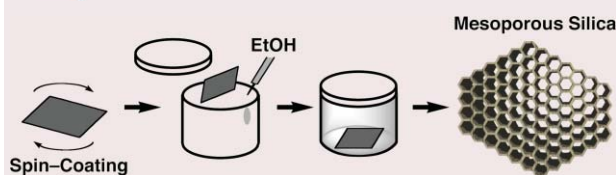


Cofactor-dependent enzyme catalysis in functionalized ionic solvents

Adam J. Walker* and Neil C. Bruce

Functionalized ionic liquids incorporating hydrogen-bonding moieties have been prepared and examined as solvents for the enzyme-catalysed oxidation of codeine. The use of hydroxylated cations permitted enzyme activity at water contents of < 100 ppm.

2572

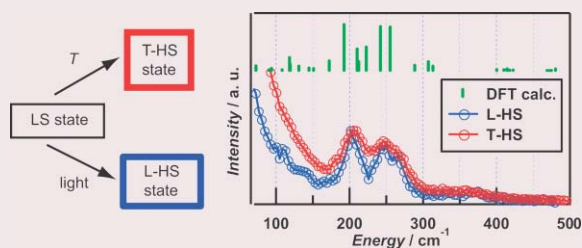


Ethanol vapor-mediated maturing for the enhancement of structural regularity of hexagonal mesoporous silica films

Akihiro Okabe, Makiko Niki, Takanori Fukushima and Takuzo Aida*

Structural regularity of hexagonal mesoporous silica films is dramatically enhanced when allowed to stand for a few hours in an ethanol vapor-containing closed bottle before dryness.

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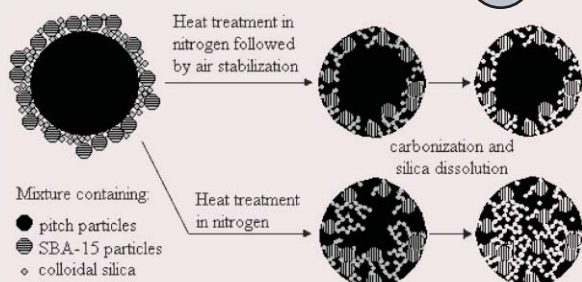


NRIS study on the [FeN₆] core in photo-induced high-spin state of [Fe(2-pic)₃]Cl₂·EtOH

Gergely Juhász,* Makoto Seto, Yoshitaka Yoda, Shinya Hayami and Yonezo Maeda

A comparison is reported for thermally (T-HS) and photo-induced high-spin (L-HS) phases of [Fe(2-pic)₃]Cl₂·EtOH (2-pic: 2-picolyamine) using the nuclear resonant inelastic scattering (NRIS) technique.

2576

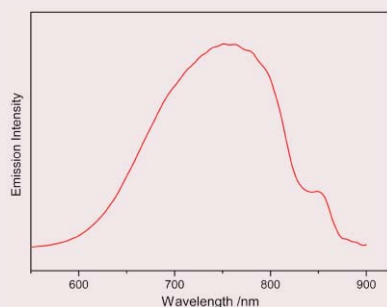


Novel pitch-based carbons with bimodal distribution of uniform mesopores

Kamil P. Gierszal and Mietek Jaroniec*

A new method is proposed for the synthesis of pitch-based carbons with bimodal distribution of uniform mesopores formed by co-imprinting of spherical silica colloids and hexagonally ordered mesoporous particles of SBA-15 into mesophase pitch particles and subsequent silica dissolution.

2578

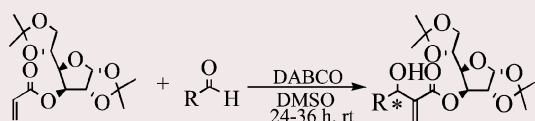


Red luminescent polymeric cuprous organosulfide generated by solvothermal redox reaction

Lei Han, Maochun Hong,* Ruihu Wang, Benlai Wu, Ying Xu, Benyong Lou and Zhengzhong Lin

A polymeric cuprous organosulfide with strong red photoluminescence was synthesized through solvothermal redox reaction, and crystallographically characterized to be a one-dimensional chiral structure containing metal–metal interactions.

2580

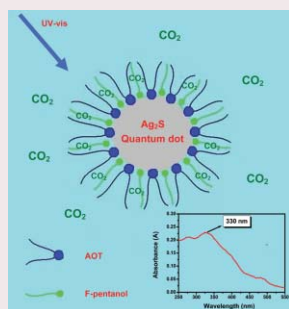


'Double asymmetric induction' as a novel tool for high stereocontrol in Baylis–Hillman reaction

Palakodety Radha Krishna,* Rachna Sachwani and V. Kannan

The strategy of double asymmetric induction is introduced in Baylis–Hillman reaction for the first time to obtain corresponding adducts with high *syn* diastereoselectivities (*de* > 90%).

2582

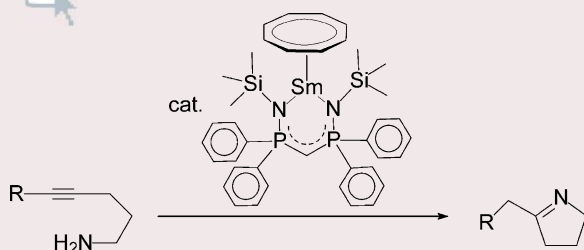


Synthesis of Ag₂S quantum dots in water-in-CO₂ microemulsions

Juncheng Liu, Poovathinthodiyil Raveendran, Zameer Shervani and Yutaka Ikushima*

Ag₂S nanocrystals with a mean diameter of 5.9 nm ($\sigma = 1.65$ nm) and characteristic of surface plasmon resonance absorption at 330 nm were grown in commercially available AOT/F-pentanol water-in-CO₂ reverse micelles.

2584

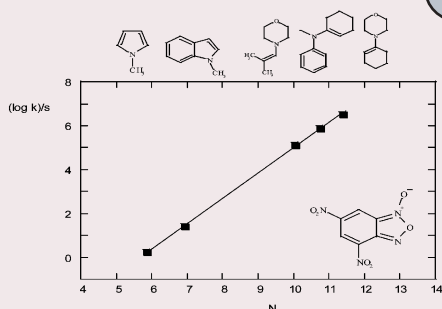


A samarium cyclooctatetraene complex as catalyst for hydroamination/cyclisation catalysis

Agustino Zulys, Tarun K. Panda, Michael T. Gamer and Peter W. Roesky*

$[\{\text{CH}(\text{PPh}_2\text{NSiMe}_3)_2\}\text{Sm}(\eta^8\text{-C}_8\text{H}_8)]$, which has no leaving group and no solvent coordinated, was used as a catalyst for the hydroamination/cyclisation reaction.

2586

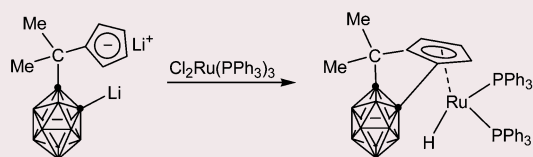


Electrophilicity parameters for σ -complexation by uncharged electron-deficient aromatic and heteroaromatic structures

François Terrier,* Sami Lakhdar, Régis Goumont, Taoufik Boubaker and Erwin Buncel

Using appropriate sets of reference nucleophiles, the reactivity of neutral electrophiles of widely different reactivity and structure has been ranked on the comprehensive electrophilicity scale of Mayr (*Acc. Chem. Res.*, 2003, **36**, 66), holding promise of a general rationalization of σ -complexation processes and related $\text{S}_{\text{N}}\text{Ar}$ substitutions.

2588



An unprecedented intramolecular coupling of *o*-carboranyl and cyclopentadienyl. Synthesis and structural characterization of a ruthenium complex containing a novel doubly-bridged cyclopentadienyl-carboranyl ligand

Yi Sun, Hoi-Shan Chan, Pierre H. Dixneuf and Zuowei Xie*

A novel ruthenium-mediated coupling reaction of a carboranyl with a cyclopentadienyl was discovered for the first time, leading to a brand new doubly-bridged cyclopentadienyl-carboranyl ligand and to a new type of chiral ruthenium complex.

2590

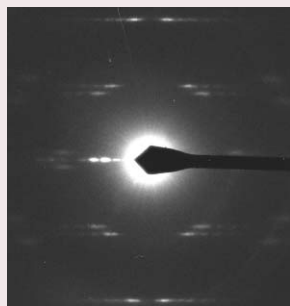


A mixed ladderane/*n*-alkyl glycerol diether membrane lipid in an anaerobic ammonium-oxidizing bacterium

Jaap S. Sinninghe Damsté,* W. Irene C. Rijpstra, Marc Strous, Mike S. M. Jetten, Olivier R. P. David, Jan A. J. Geenevasen and Jan H. van Maarseveen

A novel glycerol diether (**1**) containing ladderane and tetradecyl moieties has been identified in an anaerobic ammonium-oxidizing bacterium by GC/MS and high-field NMR spectroscopy.

2592

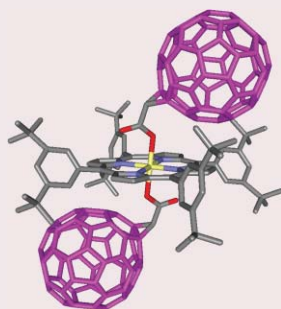


Bundles of identical double-walled carbon nanotubes

J.-F. Colomer,* L. Henrard, P. Launois, G. Van Tendeloo, A. A. Lucas and Ph. Lambin

An electron diffraction (ED) study shows unambiguously that most of the smallest bundles, produced by a CCVD method, are constituted of identical double-walled carbon nanotubes, giving a strong indication on their collective growth mechanism.

2594

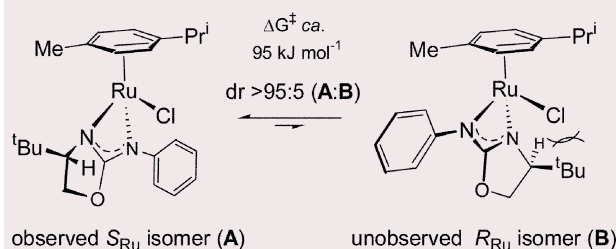


Novel fullerene-porphyrin-fullerene triad linked by metal axial coordination: Synthesis, X-ray crystal structure, and spectroscopic characterizations of *trans*-bis([60]fullerenoacetato)tin(IV) porphyrin

Hyun Jung Kim, Ki-Min Park, Tae Kyu Ahn, Seong Keun Kim, Kil Suk Kim, Dongho Kim* and Hee-Joon Kim*

A novel fullerene-porphyrin-fullerene triad linked by the axial coordination of tin(IV) porphyrin exhibits strong π - π interactions between the tin(IV) porphyrin and fullerene moieties owing to their close proximity.

2596

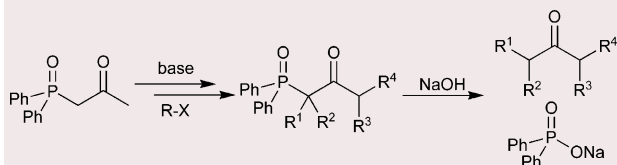


Aminooxazolate; a chiral amidinate analogue

Ian J. Munslow, Andrew R. Wade, Robert J. Deeth and Peter Scott*

High levels of diastereoselection with respect to chirality-at-metal are achieved at equilibrium for chiral complexes of ruthenium and zirconium containing a new and available range of diazaallyl ligands derived from deprotonation of aminooxazolines.

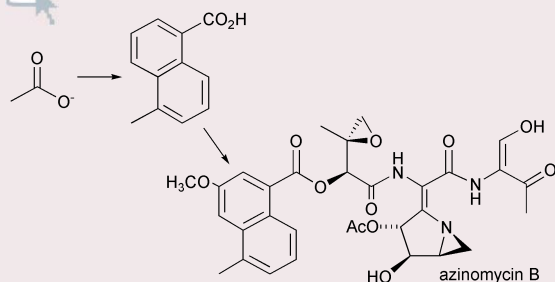
2598

**A simple, general and efficient ketone synthesis *via* alkylation and dephosphinylation of β -keto-diphenylphosphine oxides**

David J. Fox, Daniel Sejer Pedersen and Stuart Warren*

Ketone alkylations can be achieved selectively *via* activation with a base-removable diphenylphosphinoyl group.

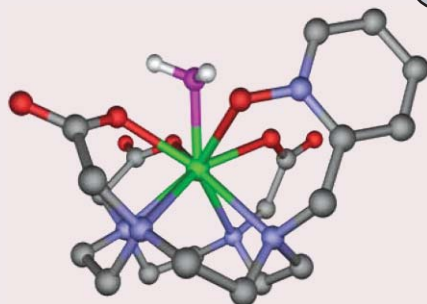
2600

**Biosynthetic studies on the azinomycins: The pathway to the naphthoate fragment**

Christophe Corre, Cyrille A. S. Landreau, Michael Shipman and Philip A. S. Lowden*

Isotopically labelled intermediates in a proposed biosynthesis of the naphthoate fragment of azinomycin B have been made and successfully incorporated by the azinomycin producing organism.

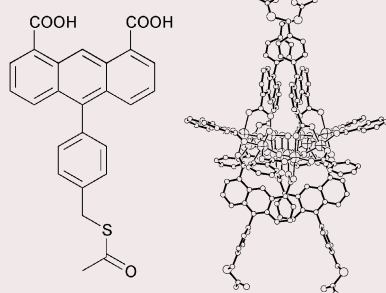
2602

**Lanthanide(III) complexes of a pyridine *N*-oxide analogue of DOTA: exclusive *M* isomer formation induced by a six-membered chelate ring**

Miloslav Polášek, Jakub Rudovský, Petr Hermann,* Ivan Lukeš, Luce Vander Elst and Robert N. Muller

Complexes with a square antiprismatic arrangement (SA, *M* isomers) are formed throughout the whole lanthanide series. The Gd(III) complex exhibits a fast water exchange ($^{298}\tau_M = 39$ ns) unexpected for a pure *M* isomer.

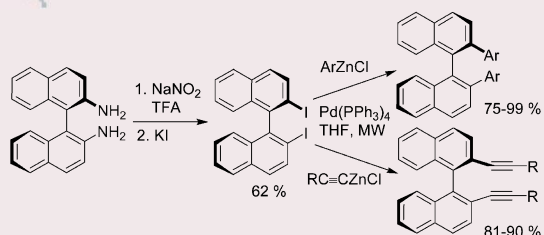
2604

**Site-specific ligation of anthracene-1,8-dicarboxylates to an Mn_{12} core: a route to the controlled functionalisation of single-molecule magnets**

Mirko Pacchioni, Andrea Cornia,* Antonio C. Fabretti, Laura Zobbi, Daniele Bonacchi, Andrea Caneschi, Guillaume Chastanet, Dante Gatteschi and Roberta Sessoli*

 Mn_{12} clusters can be functionalised in a site-specific manner using rigid dicarboxylates.Reaction of $[Mn_{12}O_{12}(O_2CPh)_{16}(H_2O)_4]$ with a derivative of anthracene-1,8-dicarboxylic acid gives a new complex containing four dicarboxylates in axial positions.

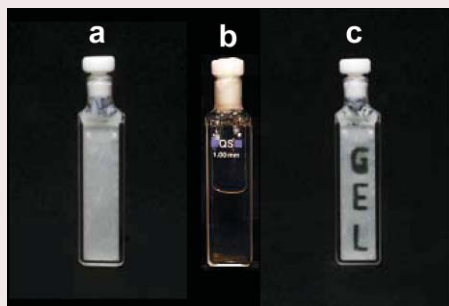
2606

**Stereoconservative Negishi arylation and alkynylation as an efficient approach to enantiopure 2,2'-diarylated 1,1'-binaphthyls**

Katarína Krascenicsová, Peter Walla, Peter Kasák, Georg Uray, C. Oliver Kappe* and Martin Putala*

A rapid and high yielding protocol for stereoconservative Negishi arylation and alkynylation of easily prepared enantiopure 2,2'-diiodo-1,1'-binaphthyl has been developed using controlled microwave irradiation.

2608

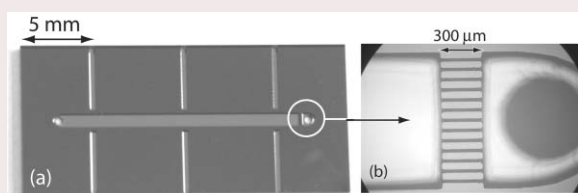


A photo-responsive organogel

Julian Eastoe,* Margarita Sánchez-Dominguez, Paul Wyatt and Richard K. Heenan

Photo-induced gel to sol transition for a photo-surfactant organogel: initial gel state (a); after irradiation (b) and after irradiation through a mask (c).

2610

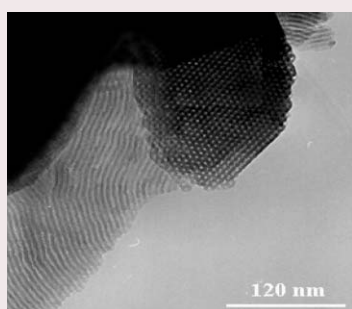


Catalyst surface characterization in microfabricated reactors using pulse chemisorption

Chelsey D. Baertsch, Martin A. Schmidt and Klavs F. Jensen*

The metal dispersion of a Pt–Al₂O₃ catalyst was measured reproducibly using pulse CO chemisorption with 4 mg of sample in a silicon microfabricated packed-bed reactor, demonstrating the applicability of microreactors for high-throughput catalyst characterization and quantitative comparison.

2612

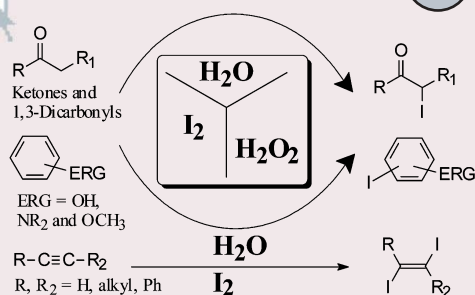


Ordered mesoporous titanosilicates with catalytically stable and active four-coordinated titanium sites

Xiaoyu Yang, Yu Han, Kaifeng Lin, Ge Tian, Yefei Feng, Xiangju Meng, Yan Di, Yuncheng Du, Yonglai Zhang and Feng-Shou Xiao*

The stable ordered mesoporous titanosilicate (Ti-JLU-20) is successfully synthesized at high temperature (180–220 °C), and catalytic tests show that Ti-JLU-20 has highly stable and active four-coordinated titanium sites in catalytic oxidations.

2614

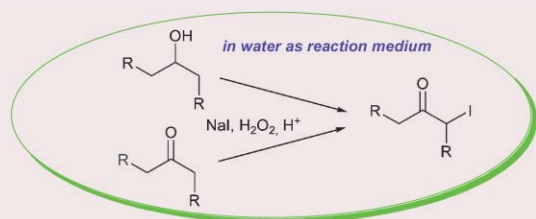


Effective and selective iodofunctionalisation of organic molecules in water using the iodine–hydrogen peroxide tandem

Marjan Jereb,* Marko Zupan and Stojan Stavber

Effective hydrogen peroxide assisted selective iodofunctionalisation of carbonyl and activated aromatic molecules using elemental iodine in water is presented, whereas stereoselective transformation of alkynes leads to (*E*)-1,2-diiodoalkenes.

2616

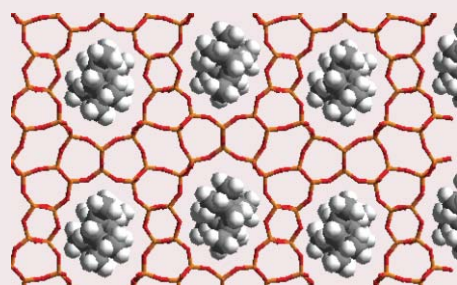


New reactions in water: metal-free conversion of alcohols and ketones into α -iodoketones

José Barluenga,* María Marco-Arias, Francisco González-Bobes, Alfredo Ballesteros and José M. González

New organic processes in water as the reaction medium: α -iodoketones have been obtained upon the treatment of ketones and alcohols with NaI and H₂O₂ in the presence of an acid.

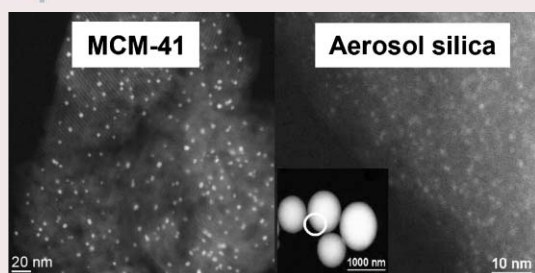
2618

**SSZ-60: a new large-pore zeolite related to ZSM-23**

Allen Burton* and Saleh Elomari

A new borosilicate zeolite, SSZ-60, has been prepared. The framework was determined by the FOCUS Fourier recycling method and possesses a 1D channel system with pores delimited by twelve-rings.

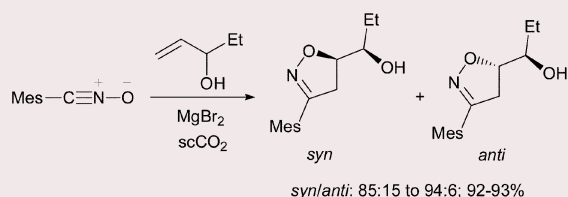
2620

**Role of pore curvature on the thermal stability of gold nanoparticles in mesoporous silica**

Mangesh T. Bore, Hien N. Pham, Timothy L. Ward and Abhaya K. Datye*

Pores arranged in a two-dimensional hexagonal structure inside spherical mesoporous silica particles help to prevent the thermal sintering of gold nanoparticles compared to straight pores in MCM-41.

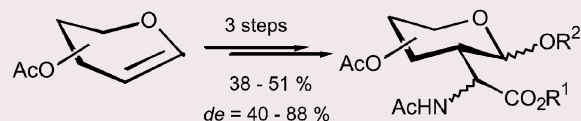
2622

**Nitrile oxide cycloadditions in supercritical carbon dioxide**

Connie K. Y. Lee,* Andrew B. Holmes,* Bushra Al-Duri, Gary A. Leeke, Regina C. D. Santos and Jonathan P. K. Seville

The regioselectivity of dipolar cycloadditions of mesitronitrile oxide to various dipolarophiles in supercritical carbon dioxide can be tuned by changes in density; the magnesium bromide-mediated cycloaddition to pent-1-en-3-ol proceeds with higher stereoselectivity than in most conventional solvents.

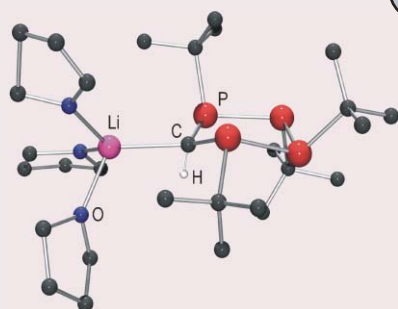
2624

**Short and stereoselective synthesis of C-glycosylated glycine derivatives from glycols by radical addition and reduction**

Thomas Sommermann, Boo Geun Kim, Karl Peters, Eva-Maria Peters and Torsten Linker*

Simple radical addition to glycols and subsequent reduction affords C-glycosylated amino acids with good overall yield in only three steps. The main *S*-configured amino acids were isolated in diastereomerically pure form.

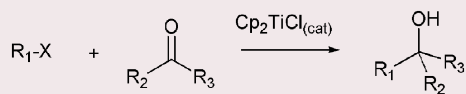
2626

**[Li(thf)₃cyclo-(P₄'Bu₄CH)] – synthesis, molecular structure and dynamic behaviour**

Robert Wolf and Evamarie Hey-Hawkins*

[Li(thf)₃cyclo-(P₄'Bu₄CH)] (2-Li), containing the first tetraphosphacyclopentane anion *cyclo*-(P₄'Bu₄CH)⁻ (2), was prepared, and its dynamic behaviour in solution analysed by variable-temperature ³¹P NMR spectroscopy.

2628

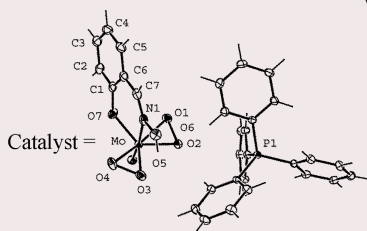


Unprecedented Barbier-type reactions catalysed by titanocene(III)

Antonio Rosales, Juan L. Oller-López, José Justicia, Andreas Gansäuer,* J. Enrique Oltra* and Juan M. Cuerva*

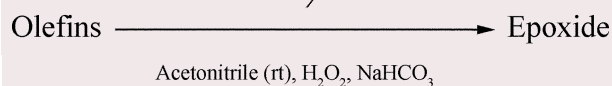
Efficient Barbier-type allylation, benzylation and propargylation reactions can be carried out under extremely mild conditions employing titanocene(III) complexes as catalysts.

2630



Highly efficient epoxidation method of olefins with hydrogen peroxide as terminal oxidant, bicarbonate as a co-catalyst and oxodiperoxo molybdenum(VI) complex as catalyst

Narottam Gharah, Santu Chakraborty, Alok K. Mukherjee and Ramgopal Bhattacharyya*



The catalyst (tetraphenylphosphonium salicylaldoximateoxo diperoxomolybdate(VI)) and NaHCO₃ combination is a highly efficient system for olefin epoxidation.

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