**Cover (far left)**

A neoglycopeptide formed by chemoselective ligation, against a typical landscape in Lombardy, Italy. Image by Laura Cipolla.

Inside cover (left)

Nanofilm enhanced, reversible, electronic mediated Fe(vi) charge transfer.



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contents

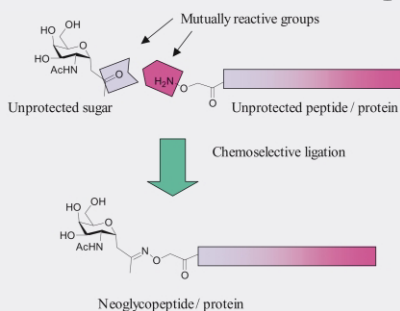
FEATURE ARTICLE

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Chemoselective ligation in glycochemistry

Francesco Peri and Francesco Nicotra*

The chemoselective ligation approach consists of the coupling of unprotected building blocks in aqueous media resulting in a convergent way in oligosaccharide and glycopeptide analogs.



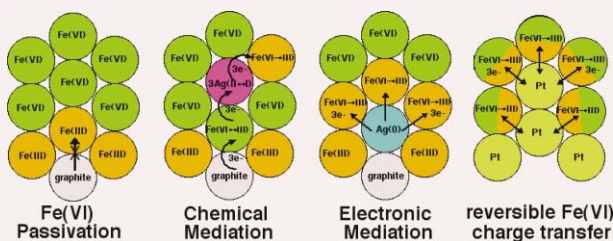
COMMUNICATIONS

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Rechargeable Fe(III/VI) super-iron cathodes

Stuart Licht* and Ran Tel-Vered

Fe(III/VI) nanolayers circumvent fundamental passivation challenges. Active reversible ultrathin Fe(VI) cathodes, with capacities twofold those in current metal hydride batteries, are electrodeposited from solution phase ferrates.

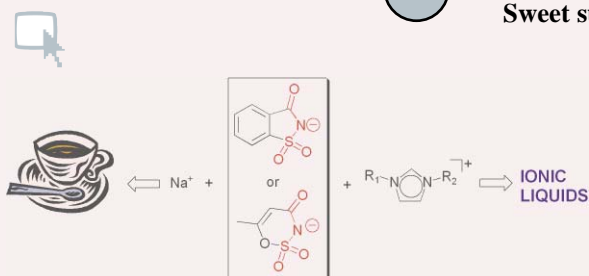


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Sweet success: ionic liquids derived from non-nutritive sweeteners

Elke B. Carter, Stephanie L. Culver, Phillip A. Fox, Russell D. Goode, Ioanna Ntai, Morgan D. Tickell, Rachel K. Traylor, Norris W. Hoffman* and James H. Davis, Jr.*

Combined with sodium cations, the saccharin and acesulfame anions are widely used as artificial sweeteners. Combined with onium cations, these same species form ionic liquids.



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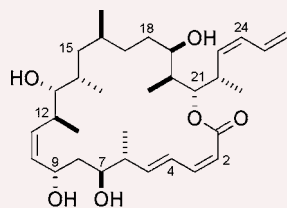
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Stereochemical determination of dictyostatin, a novel microtubule-stabilising macrolide from the marine sponge *Corallistidae* sp.

Ian Paterson, Robert Britton, Oscar Delgado and Amy E. Wright



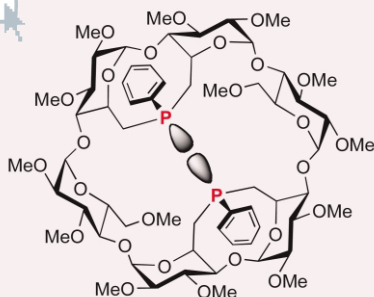
Dictyostatin

The relative stereochemistry of the 22-membered marine macrolide dictyostatin, a Taxol-like antimitotic agent, was determined based on a combination of extensive high field NMR studies, including *J*-based configuration analysis, and molecular modelling.

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Diastereospecific synthesis of phosphinidene-capped cyclodextrins leading to “introverted” ligands

Eric Engeldinger, Laurent Poorters, Dominique Armspach,* Dominique Matt* and Loïc Toupet

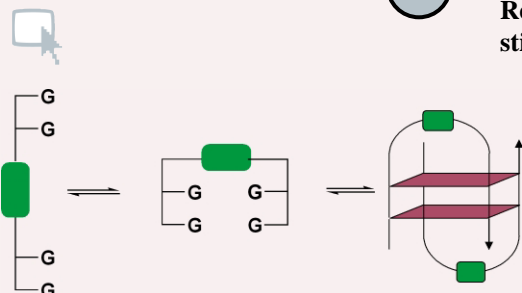


α -Cyclodextrins with phosphinidene caps were obtained in high yield by reaction of Li_2PPh with di- and tetramesylated precursors; the resulting phosphine ligands are *diastereomerically* pure, the phosphorus lone pair pointing towards the centre of the cavity.

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Reversible formation of DNA G-quadruplex hairpin dimers from stilbenediether conjugates

Frederick D. Lewis,* Yansheng Wu and Ligang Zhang



Guanine-rich oligonucleotide conjugates reversibly form hairpin dimer G-quadruplexes containing two or more guanine tetrads.

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Self-aggregation of reverse bis peptide conjugate derived from the unstructured region of the prion protein

C. Madhavaiah and Sandeep Verma*



An aged solution of a bis peptide construct, derived from the prion octarepeat sequence, is shown to form self-assembled filaments and aggregates of nanometric dimensions.

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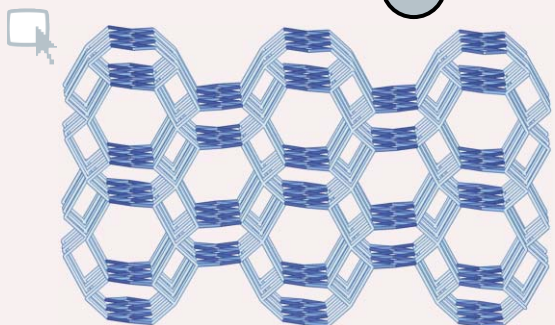
Supported nickel bromide catalyst for Atom Transfer Radical Polymerization (ATRP) of methyl methacrylate

E. Duquesne, Ph. Degée, J. Habimana and Ph. Dubois*



A new supported catalytic system is reported that promotes controlled ATRP of MMA leading to colorless PMMA chains of low polydispersity indices. Recycling of the supported catalyst is evidenced and does not prevent the polymerization from being controlled.

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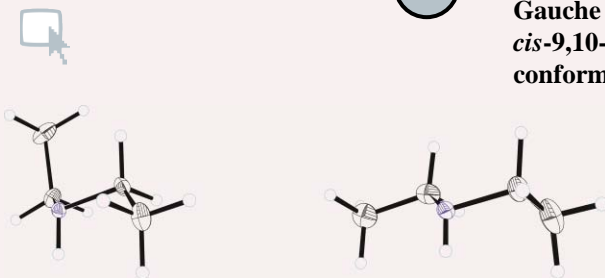


A design strategy for four-connected coordination frameworks

Oleg V. Dolomanov, David B. Cordes, Neil R. Champness,* Alexander J. Blake, Lyall R. Hanton,* Geoffrey B. Jameson, Martin Schröder and Claire Wilson

Reactions of tetrahedral Cu(I) and Ag(I) cations with 2,3,4,5-tetra(4-pyridyl)thiophene allows targeted construction of coordination frameworks with zeolite-like, $4^2.8^4$, topologies.

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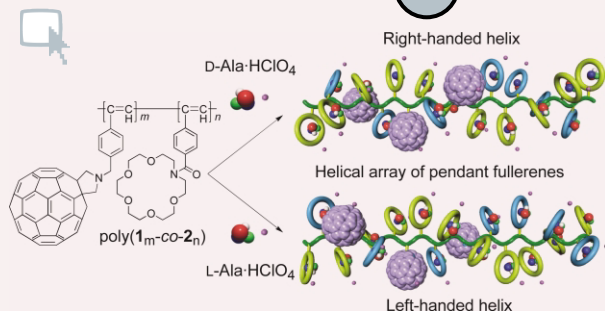


Gauche and staggered forms of diethylamine in solvates of 1,5-dichloro-*cis*-9,10-diethynyl-9,10-dihydroanthracene-9,10-diol. A case of conformational pseudopolymorphism?

Raju Mondal, Judith A. K. Howard,* Rahul Banerjee and Gautam R. Desiraju*

The gauche conformation of diethylamine (left) is *ca.* 4 kJ mol⁻¹ less stable than the staggered conformation (right) but this is offset by a better N-H...O hydrogen bridge in the crystal structure of its solvate with the title diethynyl diol.

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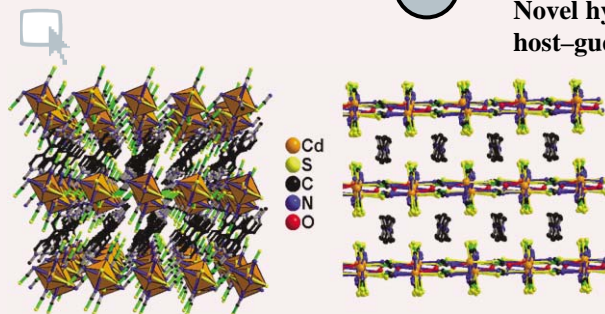


A helical array of pendant fullerenes on a helical poly(phenylacetylene) induced by non-covalent chiral interactions

Tatsuya Nishimura, Sousuke Ohsawa, Katsuhiko Maeda and Eiji Yashima*

Novel [60]fullerene-based poly(phenylacetylene)s prepared by the copolymerization of achiral phenylacetylenes bearing a C₆₀ or crown ether pendant form a one-handed helix upon complexation with L- and D-alanine, yielding a helical array of the pendant fullerenes with a predominant screw-sense along the polymer backbone.

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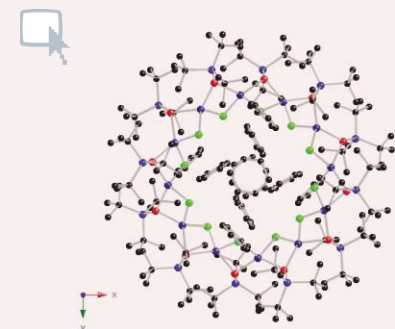


Novel hybrid hetero-sandwich architectures *via* stoichiometric control of host-guest self-organization

Zhi Yu,* Kui Yu, Longli Lai, Kostantin A. Udachin, Haoguo Zhu, Jianqin Tao, Xiaozeng You, Markus Ströbele, H.-Jürgen Meyer and John A. Ripmeester*

Cadmium thiocyanate and methylviologen form hybrid host-guest compounds with novel multiple sandwich architectures as effected by the molar ratios of the starting ingredients, forming regular and irregular grids with evidence of charge-transfer to organic dications.

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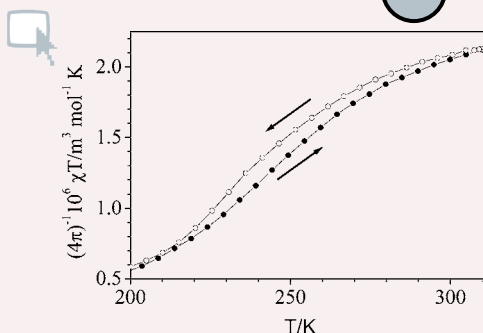


First row wheels, $\{(\text{Bu}_3\text{Si})\text{MX}\}_{12}$ (M = Co, X = Cl; M = Ni, X = Br), are common amongst both simpler and more complex aggregates

Orson L. Sydora, Peter T. Wolczanski,* Emil B. Lobkovsky, Evan Rumberger and David N. Hendrickson

$\{(\text{Bu}_3\text{Si})\text{MX}\}_{12}$ are wheels for first row transition metals (M = Fe, X = Cl, Br; M = Co, X = Cl; M = Ni, X = Br), but disproportionation and degradation reactions can lead to simpler {*e.g.* $[(\text{Bu}_3\text{Si})\text{M}]_2(\mu\text{-SSi}^i\text{Bu}_3)_2$ } and more complicated {*e.g.* $[(\mu\text{-SSi}^i\text{Bu}_3)\text{Ni}]_5(\mu_5\text{-S})$ } structures.

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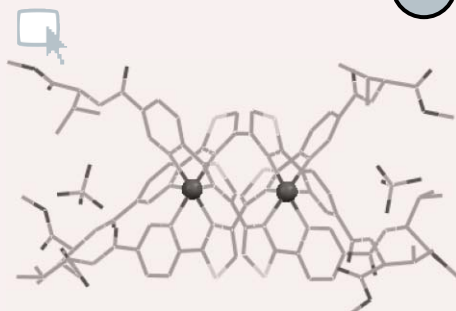


Isotopic effects may induce cooperativity in valence tautomeric transition

Olivier Cador, Andrea Dei* and Claudio Sangregorio

The substitution of CH_2Cl_2 solvating molecules with the deuterated analogues in the lattice of $[\text{Co}(\text{CTH})(\text{Phendiox})]\text{PF}_6 \cdot 1.5\text{CH}_2\text{Cl}_2$ was found to deeply affect the lattice and magnetic properties of the solid complex thus affording a memory effect.

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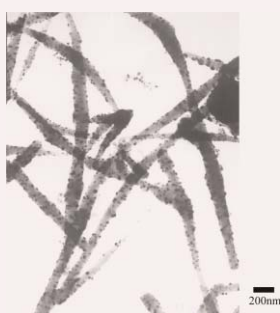


Anion control of ligand self-recognition in a triple helical array

Lindsay P. Harding, John C. Jeffery, T. Riis-Johannessen, Craig R. Rice* and Zuotao Zeng

Self-assembly of the ligand L^1 with Co^{2+} into a dinuclear triple helicate $[\text{Co}_2(\text{L}^1)_3]^{4+}$ produces an anion binding pocket which can encapsulate both perchlorate and nitrate anions. Furthermore we demonstrate how this ability to bind anions can control ligand self-recognition properties.

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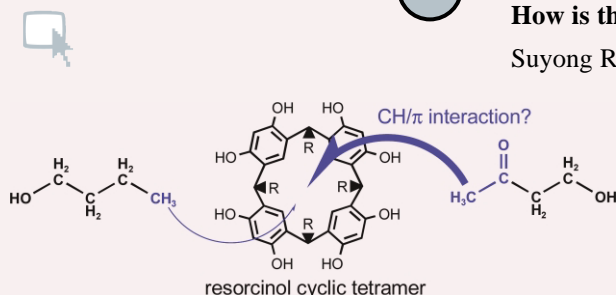


Novel iron-decorated carbon nanorods from fullerene soot

Yongfeng Li, Jieshan Qiu,* Yunpeng Wang and Hongzhe Zhang

A novel form of carbon nanorods decorated with iron particles in a size range of 30–50 nm are produced from fullerene soot-based electrodes by arc discharge, and have been tested to be active for benzene hydrogenation.

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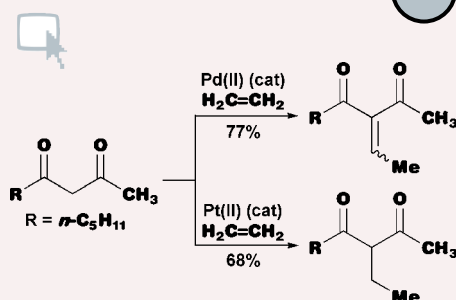


How is the CH/π interaction important for molecular recognition?

Suyong Re* and Shigeru Nagase

Ab initio calculations of an inclusion complex of resorcinol cyclic tetramer as a typical host–guest system illustrate that CH/π attractions significantly contribute to the complexation, but are not always a direct factor in molecular recognition.

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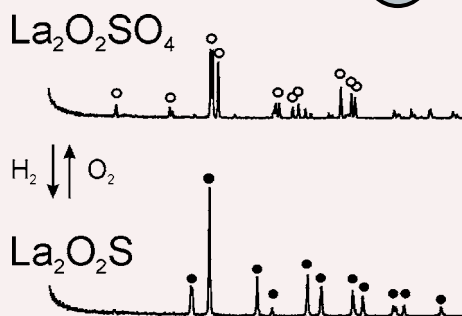


Palladium(II)- and platinum(II)-catalyzed addition of stabilized carbon nucleophiles to ethylene and propylene

Xiang Wang and Ross A. Widenhoefer*

$\text{PdCl}_2(\text{CH}_3\text{CN})_2$ catalyzes the addition of β -dicarbonyl compounds to ethylene and propylene to form products of oxidative alkylation. In comparison, $[\text{PtCl}_2(\text{H}_2\text{C}=\text{CH}_2)]_2$ catalyzes the addition of β -diketones to ethylene to form products of hydroalkylation.

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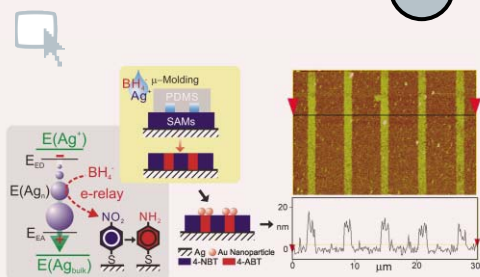


Novel oxygen storage mechanism based on redox of sulfur in lanthanum oxysulfate/oxysulfide

Masato Machida,* Kiyotaka Kawamura and Kazuhiro Ito

A sulfur redox cycle between the La₂O₂SO₄(S⁶⁺) and La₂O₂S(S²⁻) phases was found for the first time to achieve the oxygen storage of 2 mol O₂ mol⁻¹, which is eight times larger than that of the conventional CeO₂-ZrO₂ system.

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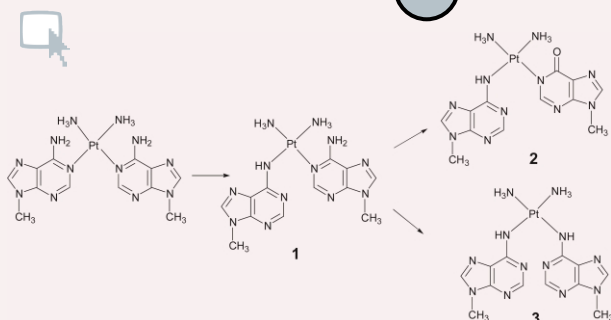


Catalytic reduction of nitro-group terminated monolayers by Ag nanoparticles; a novel strategy for site-selective patterning of organic monolayers

Yeoung Uk Seo, Seung Joon Lee and Kwan Kim*

Site-selective patterning of organic monolayers can be accomplished simply by inducing Ag nanoparticle-mediated catalytic reduction to occur on the desired regions of those monolayers.

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Platinum(II)-bis(9-methyladenine) complexes; N1→N6 migration of Pt(II) vs deamination of coordinated methyladenine

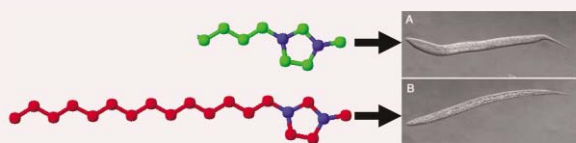
Karel D. Klika* and Jorma Arpalhti

Following migration of Pt(II) from an endocyclic N1 site to an exocyclic amino group, deamination of the N1-bound 9-methyladenine competes with a second migration step.

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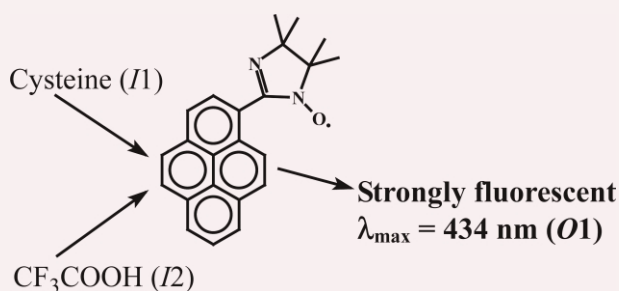
Using *Caenorhabditis elegans* to probe toxicity of 1-alkyl-3-methylimidazolium chloride based ionic liquids

Richard P. Swatloski, John D. Holbrey, Shermeen B. Memon, Guy A. Caldwell,* Kim A. Caldwell* and Robin D. Rogers*



Ionic liquids are gaining attention as new solvents within the green chemistry community; however this attention has quickly outstripped current environmental and toxicological data available. In the present communication, we establish the use of *Caenorhabditis elegans* as an inexpensive model organism for quickly exploring toxicological effects of 1-alkyl-3-methylimidazolium chloride ionic liquids.

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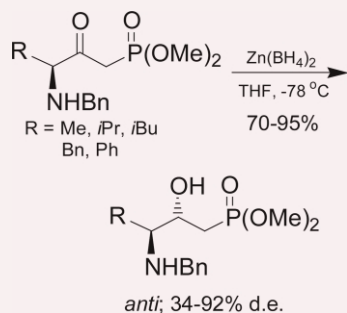


Tuning the fluorescence of 1-imino nitroxide pyrene with two chemical inputs: mimicking the performance of an “AND” gate

Hongmei Wang, Deqing Zhang,* Xuefeng Guo, Lingyun Zhu, Zhigang Shuai and Daoben Zhu*

The fluorescence of 1-imino nitroxide pyrene can be significantly enhanced only under the combined actions of Cys and CF₃COOH. This spectral behavior mimics the performance of an “AND” gate.

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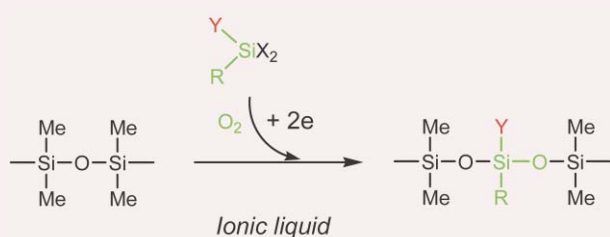


Highly diastereoselective synthesis of *anti*- γ -*N*-benzylamino- β -hydroxyphosphonates

Mario Ordóñez,* Ricardo de la Cruz-Cordero, Citlali Quiñones and Angelina González-Morales

The reduction of γ -*N*-benzylamino- β -ketophosphonates with $\text{Zn(BH}_4)_2$ shows excellent levels of *anti*-diastereoselectivity to give good chemical yields of *anti*- γ -*N*-benzylamino- β -hydroxyphosphonates.

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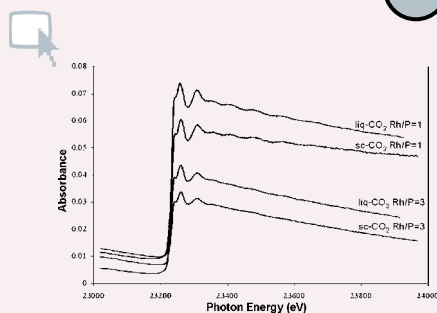


Superoxide-stable ionic liquids: new and efficient media for electro-synthesis of functional siloxanes

Bruno Martiz, Robert Keyrouz, Said Gmouh, Michel Vaultier and Viatcheslav Jouikov*

$\text{O}_2^{\cdot-}$ stable ionic liquids, used as media for electrogeneration of diorganyl silanones *in situ* in the presence of permethylsiloxanes, allow the formation of functional group bearing siloxanes selectively and in good yields

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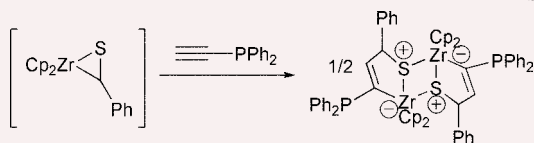


Extended X-ray absorption fine structure (EXAFS) characterisation of the hydroformylation of oct-1-ene by dilute Rh- PEt_3 catalysts in supercritical carbon dioxide

Steven G. Fiddy,* John Evans,* Thomas Neisius, Xue-Zhong Sun, Zhang Jie and Michael W. George

The structures of rhodium hydroformylation catalysts in liquid and supercritical carbon dioxide have been investigated by Rh K-edge X-ray absorption spectroscopy carried out *in situ*.

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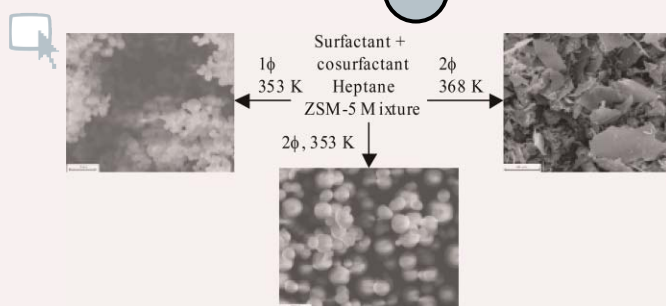


Isolation, dynamic NMR study and X-ray characterisation of a bis sulfonium zirconocene-ate dimer

Esteban Ortega, Nadine Pirio, Philippe Meunier* and Bruno Donnadieu

The first example of a structurally characterised sulfur-bridged binuclear zirconathiolane complex, was prepared, characterised by NMR spectroscopy and X-ray crystallography, and some aspects of its solution behaviour were studied.

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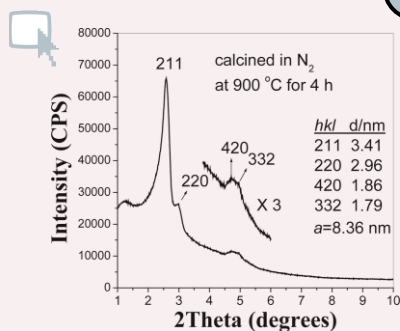


Modifying zeolite particle morphology and size using water/oil/surfactant mixtures as confined domains for zeolite growth

Seungju Lee and Daniel F. Shantz*

The synthesis of silicalite-1 particles in microemulsions is demonstrated wherein the particle size and morphology can be varied.

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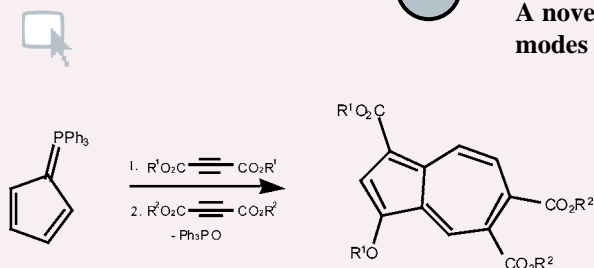


Mesoporous silica with *Ia3d* cubic structure and good thermal stability

Jiebin Pang, J. Eric Hampsey, Qingyuan Hu, Zhiwang Wu, Vijay T. John and Yunfeng Lu*

Mesoporous silica with *Ia3d* cubic structure and good thermal stability has been synthesized using cationic alkylammonium surfactant and neutral sugar surfactant as co-templates.

684

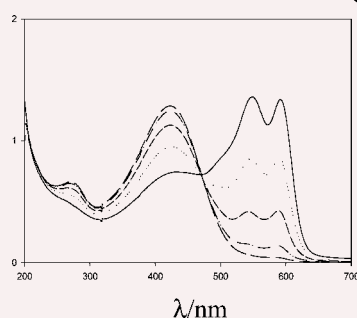


A novel azulene synthesis from the Ramirez ylide involving two different modes of its reaction with activated alkynes

Lee J. Higham, P. Gabriel Kelly, David M. Corr, Helge Müller-Bunz, Brian J. Walker and Declan G. Gilheany*

A very short synthesis of 1,3,5,6-substituted azulenes from the Ramirez ylide is presented. This rare substitution pattern was confirmed by an X-ray crystallographic study.

686

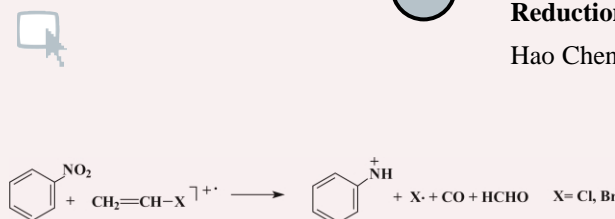


Unusual chromic and doping behavior of ether substituted polythiophenes

Yu Wang, William B. Euler and Brett L. Lucht*

Poly[3-(oligoethylene oxide)-4-methylthiophene] is doped by HCl in aqueous solution in the absence of oxygen and undergoes dramatic solvatochromism in water-ethanol mixtures.

688

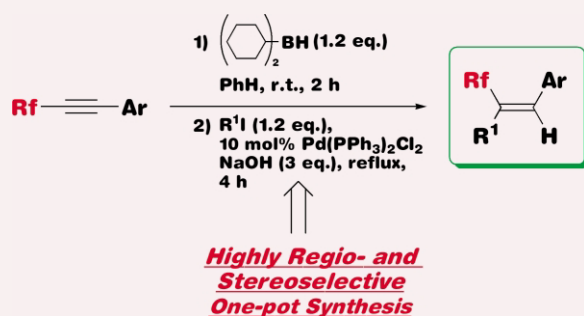


Reduction of nitroaromatics to arylnitrenium ions by vinyl halide cations

Hao Chen, Xubin Zheng, Pengxiang Yang and R. Graham Cooks*

This novel nitroreduction reaction provides a new route to the generation of arylnitrenium ions, a highly selective detection method for explosives in mixtures and clues to the carcinogenic activity of nitroaromatics.

690

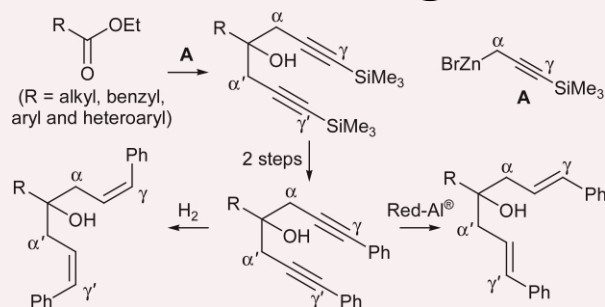


A sequential highly stereoselective hydroboration and Suzuki-Miyaura cross-coupling reaction of fluoroalkylated internal acetylenes: a practical one-pot synthesis of fluoroalkylated trisubstituted alkenes

Tsutomu Konno,* Jungha Chae, Tomoo Tanaka, Takashi Ishihara and Hiroki Yamanaka

A one-pot synthesis of trisubstituted alkenes starting from fluoroalkylated internal alkynes.

692

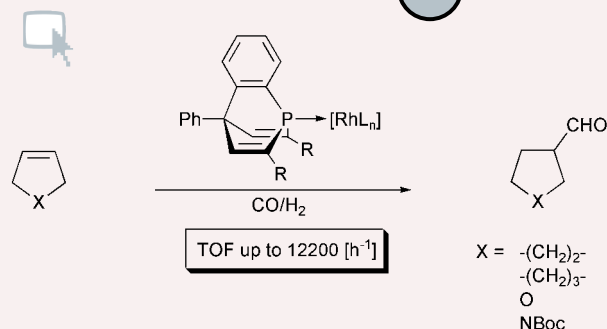


Facile protocol for the highly regioselective and stereodivergent synthesis of substituted bishomoallylic alcohols from esters

Martin Oestreich* and Fernando Sempere-Culler

Indirect preparation of isomerically enriched symmetric bishomoallylic alcohols was realized by a highly regioselective bispropargylation and subsequent diastereoselective reduction establishing a reliable entry into this difficult-to-obtain class of compounds.

694

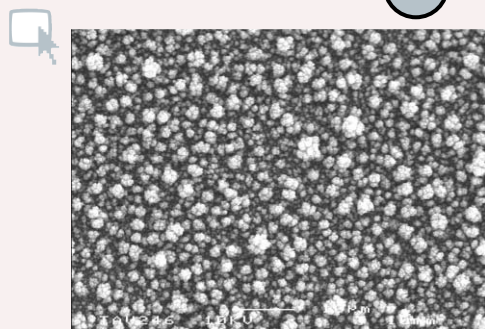


Phosphabarrelene–rhodium complexes as highly active catalysts for isomerization free hydroformylation of internal alkenes

Bernhard Breit* and Evelyn Fuchs

A new class of phosphabarrelene–rhodium catalysts is described which allows for the first time hydroformylation of internal alkenes with very high activity and which proceeds essentially free of alkene isomerization.

696

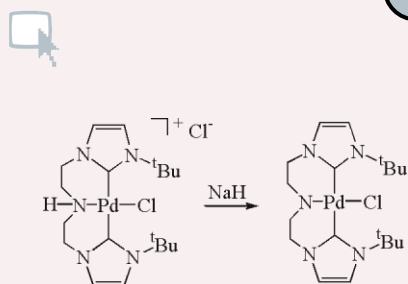


Metal organic chemical vapour deposition (MOCVD) of bone mineral like carbonated hydroxyapatite coatings

J. A. Darr,* Z. X. Guo, V. Raman, M. Bououdina and I. U. Rehman

The chemical vapour deposition of bone mineral-like carbonated apatite coatings from volatile metal–organic precursors is reported for the first time. This approach provides a new method for producing bioceramic coatings from liquid or volatile molecular precursors.

698

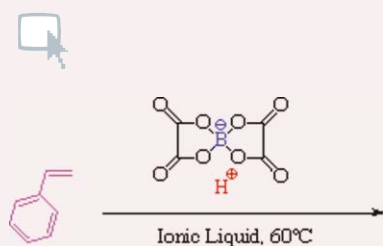


The synthesis of a di-N-heterocyclic carbene-amido complex of palladium(II)

Richard E. Douthwaite,* Jennifer Houghton and Benson M. Kariuki

A transition metal NHC–amido complex has been prepared by deprotonation of the analogous secondary amine.

700

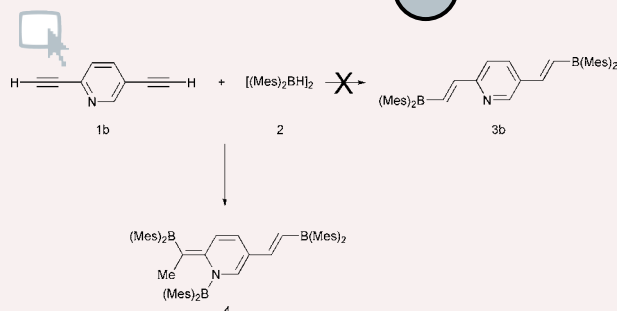


Living cationic polymerisation of styrene in an ionic liquid

R. Vijayaraghavan and D. R. MacFarlane*

Narrow polydispersity polystyrene has been obtained from living polymerisation in room temperature ionic liquids under mild reaction conditions using mild Lewis acid catalysts.

702

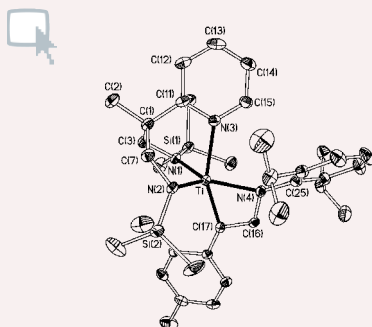


Two contrasting ethynyl hydroboration pathways in the formation of a novel tris-hydroboration product from reaction of dimesitylborane with 2,5-diethynylpyridine

Christopher D. Entwistle, Andrei S. Batsanov, Judith A. K. Howard, Mark A. Fox and Todd B. Marder*

Reaction of 2,5-diethynylpyridine with dimesitylborane unexpectedly resulted in formation of the sterically encumbered tris-hydroboration product **4**, the structure of which has been determined by single-crystal X-ray diffraction.

704

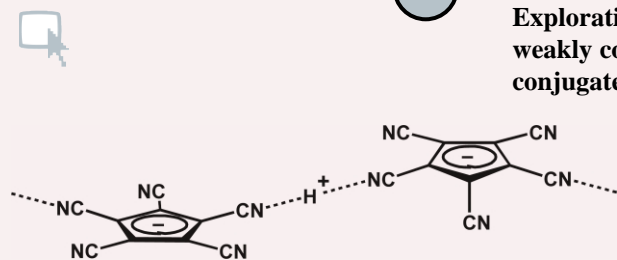


Synthesis and structural characterization of an azatitanacyclobutene: the key intermediate in the catalytic anti-Markovnikov addition of primary amines to α -alkynes

Benjamin D. Ward, Aline Maise-François, Philip Mountford* and Lutz H. Gade*

The first example of a key intermediate in the anti-Markovnikov addition of a primary amine to a terminal acetylene has been structurally characterized by X-ray diffraction.

706

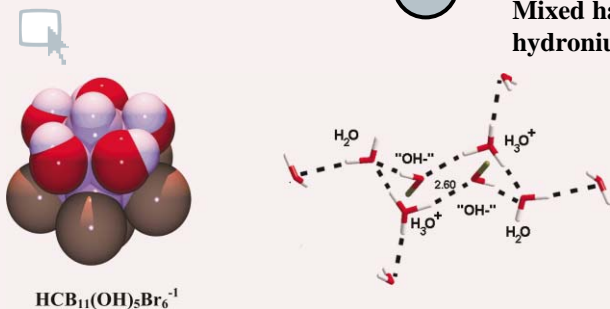


Exploration of the pentacyano-*cyclo*-pentadienide ion, $C_5(CN)_5^-$, as a weakly coordinating anion and potential superacid conjugate base. Silylation and protonation

Christopher Richardson and Christopher A. Reed*

The reportedly unprotonatable pentacyano-*cyclo*-pentadienide ion, $C_5(CN)_5^-$, can be protonated *via* a silyl derivative using reagents based on weakly coordinating carborane anions. Ironically, the conjugate acid of $C_5(CN)_5^-$ is unexpectedly weak because of a polymeric solid state structure.

708

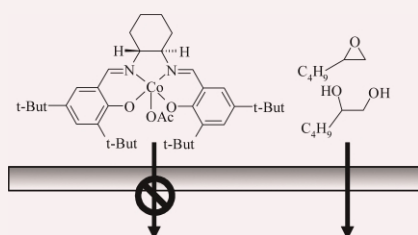


Mixed halo/hydroxy carborane anions: thermally stable platforms for hydronium ion isolation

Daniel J. Stasko,* Kevin J. Perzynski and Mark A. Wasil

Hydroxylation of the robust, weakly coordinating hexahalo-carborane anion system, $CB_{11}H_6Br_6^-$, produces a new class of anion with mixed halo/hydroxyl substituents, $HCB_{11}(OH)_5Br_6^-$ which can be used to isolate a number of hydronium cation salts including an 'ice tautomer' composed of hydronium cations, anion hydroxyl groups and coordinated water molecules.

710

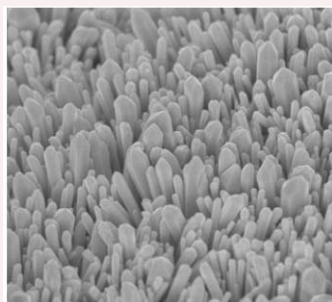


Recycling of the homogeneous Co-Jacobsen catalyst through solvent-resistant nanofiltration (SRNF)

S. Aerts,* H. Weyten, A. Buekenhoudt, L. E. M. Gevers, I. F. J. Vankelecom and P. A. Jacobs

A newly developed polymeric SRNF-membrane was used to recycle the homogeneous Co-Jacobsen complex, catalysing the hydrolytic kinetic resolution of 1,2-epoxyhexane.

712



A template-free aqueous route to ZnO nanorod arrays with high optical property

Qun Tang, Wenjia Zhou, Jianmin Shen, Wu Zhang, Lingfen Kong and Yitai Qian*

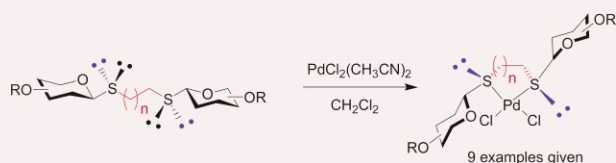
A novel metal–alkali–hydrogen peroxide hydrothermal route was designed to successfully synthesize well-aligned ZnO nanorod arrays, which showed sharp excitonic emission and weak deep level emission.

714



Highly diastereoselective formation of C_2 -symmetric bis-thioglycoside Pd(II) complexes: the role of the *exo* anomeric effect

Noureddine Khair,* Cristina S. Araújo, Bélen Suárez, Eleuterio Alvarez and Inmaculada Fernández*



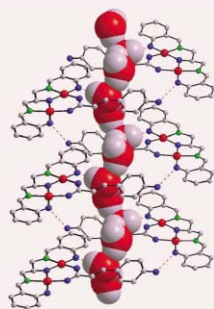
The formation of C_2 -symmetric bis-thioglycoside Pd(II) complexes, take place in a highly stereoselective manner; while up to three diastereoisomers are possible, a single isomer was always obtained as a consequence of the *exo*-anomeric effect.

716



Helical supramolecular host with aquapores anchoring alternate molecules of helical water chains

Arindam Mukherjee, Manas K. Saha, Munirathinam Nethaji and Akhil R. Chakravarty*



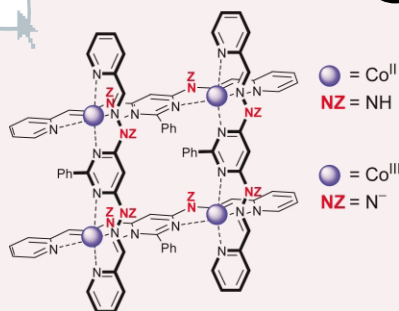
A helical chain of water molecules anchored on a helical supramolecular host formed from the self assembly of a dicopper(II) complex models the 1D chain water molecules in biological systems.

718



Protonic modulation of redox properties in ionisable [2 × 2] grid-like metalloarrays

Lindsay H. Uppadine, Jean-Paul Gisselbrecht and Jean-Marie Lehn*



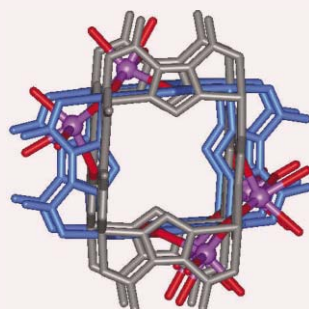
The oxidation state of the cobalt centres can be controlled by modification of the protonation state in [2 × 2] grid-like arrays based on ionisable bis(hydrazone) ligands, allowing conversion of the paramagnetic Co^{II}₄ into the diamagnetic Co^{III}₄ grid.

720



A novel mixed-valence complex containing Co^{II}Co^{III}₂ molecular squares with 4,5-imidazoledicarboxylate bridges

Chuan-Feng Wang, En-Qing Gao,* Zheng He and Chun-Hua Yan*

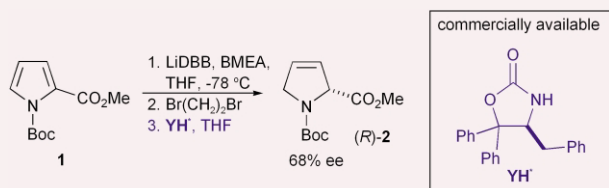


The use of the fully deprotonated 4,5-imidazoledicarboxylate ion as rigid bis(bidentate) linkers led to a unique mixed-valence molecular square in which Co(II) and Co(III) alternate at the corners, and the molecular squares are further interlinked by oxygen-bridged disodium units into a “chain of squares”.

722

Enantiopure oxazolidinones as chiral acids in the asymmetric protonation of *N*-Boc pyrrole derived enolates

David R. Carbery and Timothy J. Donohoe*

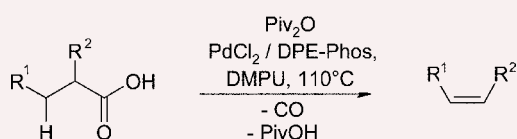


A novel set of chiral protonating agents have been used to render the ammonia free reduction of pyrroles an enantioselective process.

724

A mild and efficient protocol for the conversion of carboxylic acids to olefins by a catalytic decarbonylative elimination reaction

Lukas J. Gooßen* and Nuria Rodríguez

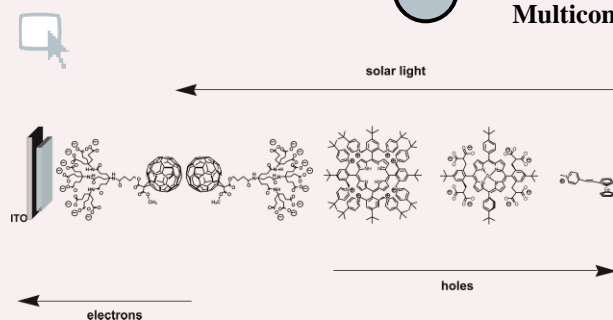


A newly developed highly active catalyst system allows the *in situ* activation and decarbonylative elimination of carboxylic acids to olefins under unprecedented mild conditions.

726

Multicomponent redox gradients on photoactive electrode surfaces

Dirk M. Guldi,* Israel Zilbermann, Greg Anderson, Andrew Li, Domenico Balbinot, Norbert Jux,* Maria Hatzimarinaki, Andreas Hirsch* and Maurizio Prato*



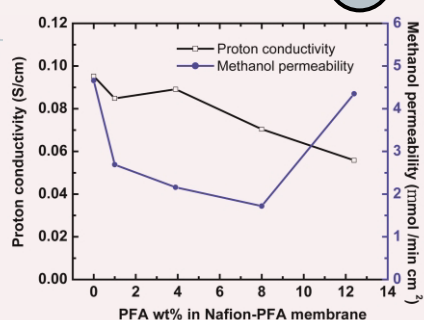
Redox gradients have been used to tailor the arrangement of photoactive ITO-electrodes at the molecular level.

728

Nafion–polyfurfuryl alcohol nanocomposite membranes with low methanol permeation

Jin Liu, Huanting Wang,* Shaoan Cheng and Kwong-Yu Chan*

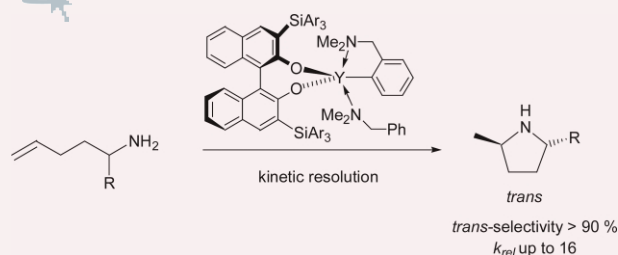
Nafion–polyfurfuryl alcohol nanocomposite membranes with low methanol permeability and high proton conductivity were synthesized by *in-situ* polymerisation of furfuryl alcohol inside commercial Nafion membranes.



730

Kinetic resolution of chiral aminoalkenes *via* asymmetric hydroamination/cyclisation using binaphtholate yttrium complexes

Denis V. Gribkov and Kai C. Hultsch*

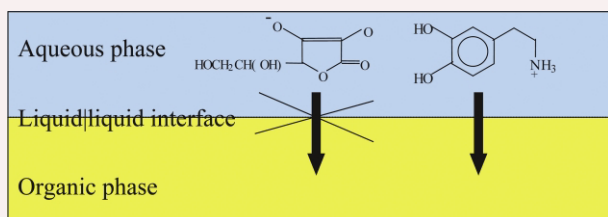


The efficient kinetic resolution of chiral α -substituted 1-aminopent-4-enes *via* asymmetric hydroamination has been achieved for the first time using new chiral binaphtholate yttrium aryl complexes.

732

Selective voltammetric detection of dopamine in the presence of ascorbate

Damien W. M. Arrigan,* Mihaela Ghita and Valerio Beni

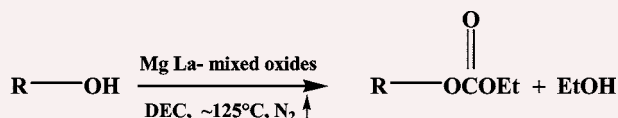


Dopamine can be selectively detected in the presence of ascorbate by exploiting the transfer of dopamine across the interface between two immiscible electrolyte solutions, a transfer not undergone by ascorbate.

734

An efficient synthesis of organic carbonates: atom economic protocol with a new catalytic system

Bhaskar Veldurthy and François Figueras*



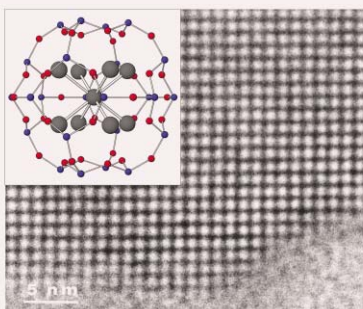
R = Aliphatic, aromatic, cyclic and heterocyclic

Efficient and selective synthesis of unsymmetrical organic carbonates *via* direct condensation of an alcohol with diethyl carbonate in the presence of MgLa mixed metal oxides as basic heterogeneous catalyst.

736

An ordered array of cadmium clusters assembled in zeolite A

Jennifer E. Readman, Peter D. Barker, Ian Gameson, Joseph A. Hriljac, Wuzong Zhou, Peter P. Edwards and Paul A. Anderson*

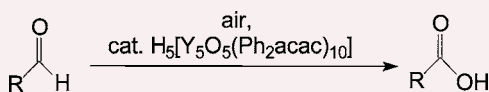


A cubic array of cationic cadmium clusters has been assembled in zeolite A and characterized in atomic detail through Rietveld analysis of powder synchrotron X-ray diffraction data and high resolution transmission electron microscopy.

738

A pentanuclear yttrium hydroxo cluster as an oxidation catalyst. Catalytic oxidation of aldehydes in the presence of air

Peter W. Roesky,* Graciela Canseco-Melchor and Agustino Zulus

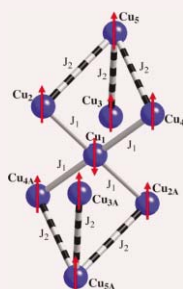


The oxidation of aldehydes to the corresponding carboxylic acids in the presence of air is homogeneously catalysed by the stable lanthanide cluster $\text{H}_5[\text{Y}_5(\mu_4\text{-O})(\mu_3\text{-O})_4(\mu\text{-}\eta^2\text{-Ph}_2\text{acac})_4(\eta^2\text{-Ph}_2\text{acac})_6]$ (Ph_2acac = dibenzoylmethanide).

740

A novel nonanuclear Cu^{II} carboxylate-bridged cluster aggregate with an S = 7/2 ground spin state

Muralee Murugesu, Philippa King, Rodolphe Clérac, Christopher E. Anson and Annie K. Powell*

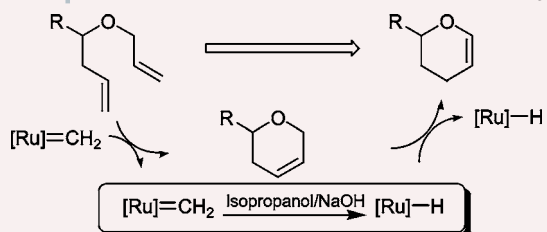


Two ferromagnetically coupled Cu_4 units antiferromagnetically linked through a central Cu^{II} comprise the core of $[\text{Cu}_9(\text{cpida})_6(\text{MeOH})_6] \cdot 6(\text{MeOH})$, which has an $S = 7/2$ spin ground state. The construction of aggregates with high spin ground states is an important goal in the area of molecular magnetism.

742

In situ conversion of a Ru metathesis catalyst to an isomerization catalyst

Bernd Schmidt

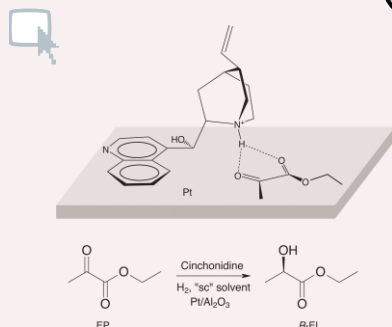


Addition of secondary alcohols and a base to a metathesis reaction induces conversion of the metathesis catalyst, a ruthenium carbene complex, to an efficient isomerisation catalyst, which is most likely a Ru–H species.

744

Identification of catalyst surface species during asymmetric platinum-catalysed hydrogenation in a “supercritical” solvent

Michael S. Schneider, Atsushi Urakawa, Jan-Dierk Grunwaldt, Thomas Bürgi and Alfons Baiker*

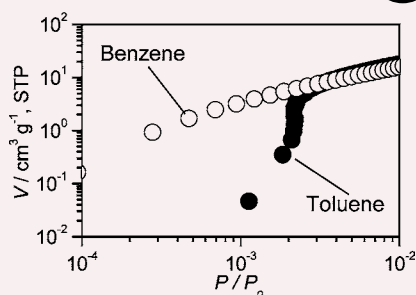


In situ attenuated total reflection IR spectroscopy investigations on the platinum catalysed enantioselective hydrogenation of ethyl pyruvate (EP) in “supercritical” ethane revealed that *cis*-EP is the dominant adsorbed species which interacts with the co-adsorbed chiral modifier cinchonidine *via* hydrogen bonding.

746

High benzene selectivity of uniform sub-nanometre pores of self-ordered mesoporous silicate

Yuko Ueno,* Akiyuki Tate, Osamu Niwa, Hao-shen Zhou,* Takeo Yamada and Itaru Honma



A high benzene gas selectivity over toluene of more than 140 was observed in the micropore condensation region of mesoporous silicate SBA-15.

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