



Cover
Aromatic amides achieve conformational preference rather like windmills facing into the wind (pp. 127–135).



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contents

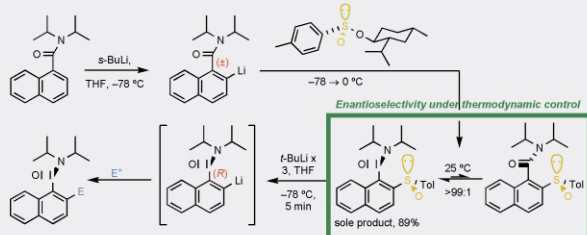
FEATURE ARTICLE

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Atropisomers and near-atropisomers: achieving stereoselectivity by exploiting the conformational preferences of aromatic amides

Jonathan Clayden

By exploiting simple conformational preferences in amides, high levels of stereoselectivity may be achieved. This strategy has been applied to the synthesis of chiral ligands and auxiliaries, and enables ultra-remote stereocontrol.



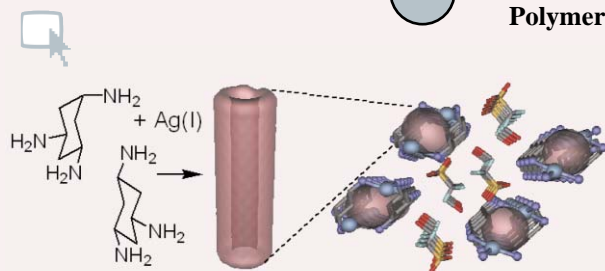
COMMUNICATIONS

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Polymeric silver(I) coordination tubes

Alexandra L. Pickering, Georg Seeber, De-Liang Long and Leroy Cronin*

Isolated polymeric Ag(I) coordination tubes, $\{[Ag(\textit{trans-tach})]CF_3SO_3\}_\infty$ and $\{[Ag(\textit{cis-tach})](CH_3OH)CF_3SO_3\}_\infty$ are self-assembled from the rigid triamino ligands *cis,cis*-1,3,5-triaminocyclohexane (*cis-tach*) and *cis,trans*-1,3,5-triaminocyclohexane (*trans-tach*), forming two topologically equivalent 1-D frameworks.

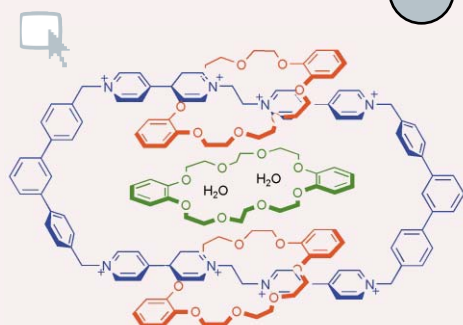


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Host–guest interactions template: the synthesis of a [3]catenane

Amy L. Hubbard, Gregory J. E. Davidson, Roopa H. Patel, James A. Wisner and Stephen J. Loeb*

Synthesis of [3]catenanes containing 1,2-bis(4,4'-bipyridinium)ethane binding sites and various 24-crown-8 ethers shows that dibenzo-24-crown ether is ideally suited as an external template for the one-step synthesis of the [3]catenane that contains this crown. Solution studies demonstrate the reversible binding of the crown guest and its X-ray structure shows a unique three-layer adduct, $\{[3]\text{catenane} \subset (\text{DB24C8} \subset (2H_2O))\}$.



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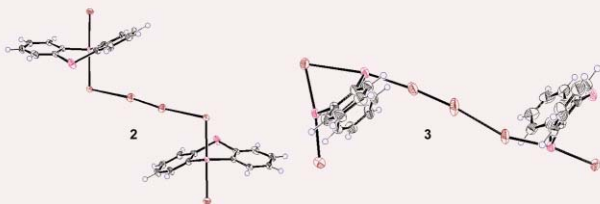
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First Br₄ four centre–six electron and Se₂Br₅ seven centre–ten electron bonds in nonionic bromine adducts of selenanthrene

Warô Nakanishi,* Satoko Hayashi, Shigehiro Yamaguchi and Kohei Tamao

Extended hypervalent Br₄ 4c–6e and Se₂Br₅ 7c–10e bonds are detected in nonionic bromine adducts with selenanthrene, as shown in **2** and **3**, respectively.

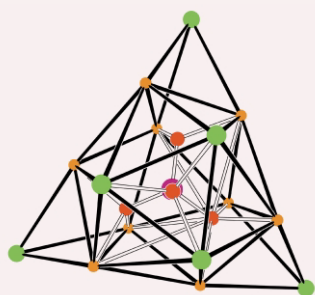


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Phosphonate ligands encourage a Platonic relationship between cobalt(II) and alkali metal ions

Stuart Langley, Madeleine Helliwell, James Raftery, Evangelos I. Tolis and Richard E. P. Winpenny*

Use of phosphonates as ligands for cobalt(II) leads to two new cage complexes where the metal ions form a surprisingly regular array, *e.g.* the capped icosahedron shown.

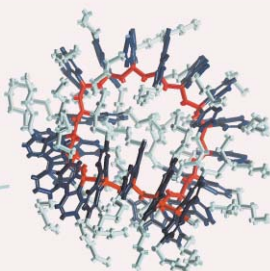


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Poly(2,7-di-*n*-pentyldibenzofulvene) showing chiroptical properties in the solid state based purely on a chiral conformation

Tamaki Nakano,* Osamu Nakagawa, Masashi Tsuji, Mitsuru Tanikawa, Tohru Yade and Yoshio Okamoto

PDBF polymers showing significant CD absorptions in film form have been synthesized by anionic polymerization.

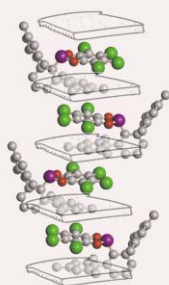


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Cycloaddition of phosphanylidene-σ⁴-phosphoranes ArP=PMe₃ and quinones to yield 1,3,2-dioxophospholanes

Xufang Chen, Rhett C. Smith and John D. Protasiewicz*

An interesting *meta*-terphenyl sandwich is observed for the solid state structure of dioxophospholane **3a**. This material and other 1,3,2-dioxophospholanes are easily prepared in good to excellent yields from the reaction of phosphanylidene-σ⁴-phosphoranes ArP=PMe₃ (Ar = 2,6-Mes₂C₆H₃ or 2,4,6-*t*-Bu₃C₆H₂) with *ortho*-quinones.

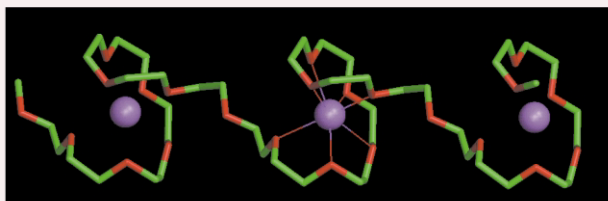


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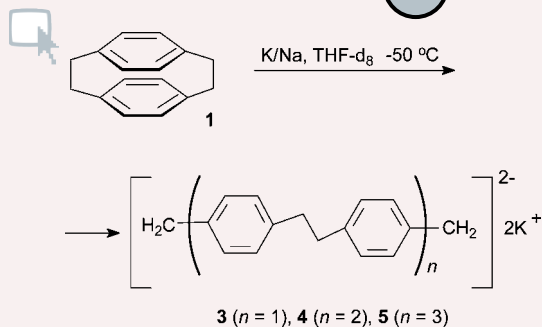
The structure of poly(ethylene oxide)₈ : NaBPh₄ from a single crystal oligomer and polycrystalline polymer

Edward Staunton, Alasdair M. Christie, Yuri G. Andreev, Alexandra M. Z. Slawin and Peter G. Bruce*

The structure of poly(ethylene oxide)₈ : NaBPh₄ was solved by growing single crystals of an oligomeric complex which provided a suitable model for refinement of the polymer structure using powder diffraction data.



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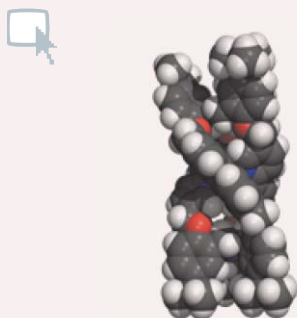


NMR and computational studies of the chemical reduction of [2.2]paracyclophane: formation of dianionic *p*-xylylenyl oligomers

Ilya D. Gridnev* and Fabio Pichierri

Reaction of [2.2]paracyclophane with K/Na alloy in THF gives a *p*-xylylenyl dianion together with its dimer and trimer which are relatively stable at low temperatures; at ambient temperatures further polymerization takes place.

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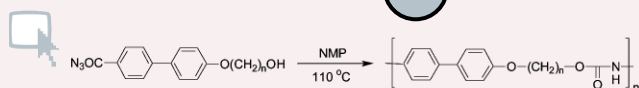


Inherent helicity in an extended tris-bipyridyl molecular cage

David F. Perkins, Leonard F. Lindoy,* George V. Meehan* and Peter Turner

A new molecular cage incorporating three bipyridyl units has been synthesised by a conventional multi-step procedure as well as, much more efficiently, by a Ni(II) template procedure.

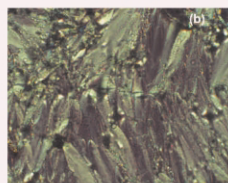
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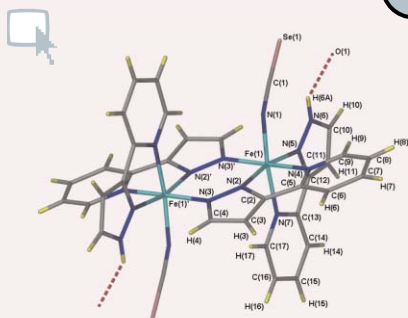
Synthesis of new thermotropic liquid crystalline polyurethanes containing biphenyl mesogens using a novel AB-type self-polycondensation

T. Ranganathan, C. Ramesh and Anil Kumar*

A series of thermotropic main chain liquid crystalline polyurethanes containing biphenyl mesogens and flexible methylene spacers were synthesized using the novel AB-type self-polycondensation approach for the first time.



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Structure and magnetism of a new pyrazolate bridged iron(II) spin crossover complex displaying a single HS–HS to LS–LS transition

Ben A. Leita, Boujemaa Moubaraki, Keith S. Murray,* Jonathan P. Smith and John D. Cashion

The dinuclear iron(II) complex $[(\text{pypzH})(\text{NCSe})\text{Fe}(\mu\text{-pypz})_2\text{Fe}(\text{NCSe})(\text{pypzH})] \cdot 2\text{H}_2\text{O}$ displays a single, sharp spin crossover transition between the [HS–HS] and [LS–LS] states and is structurally characterised above and below the $T_{1/2} = 225$ K value.

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The regiospecific Fischer indole reaction in choline chloride·2ZnCl₂ with product isolation by direct sublimation from the ionic liquid

Raul Calderon Morales, Vasuki Tambyrajah, Paul R. Jenkins,* David L. Davies and Andrew P. Abbott

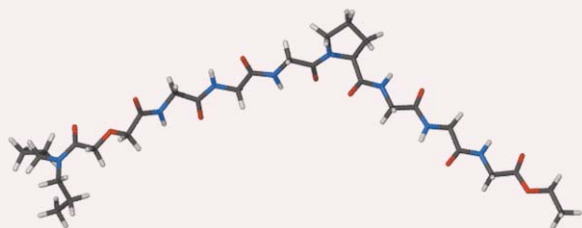
The Fischer indole synthesis occurs in high yield with one equivalent of the ionic liquid choline chloride·2ZnCl₂; exclusive formation of 2,3-disubstituted indoles is observed in the reaction of alkyl methyl ketones, and the products readily sublime directly from the ionic liquid.

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Chloride complexation by heptapeptides: influence of C- and N-terminal sidechains and counterion

Robert Pajewski, Riccardo Ferdani, Paul H. Schlesinger and George W. Gokel*

Open-chained heptapeptide derivatives of the form $(R^1)_2NCOCH_2OCH_2CO-GGGPGGG-OR^2$ complex chloride anion; the magnitude of binding depends on R^1 , R^2 and chloride's counterion.

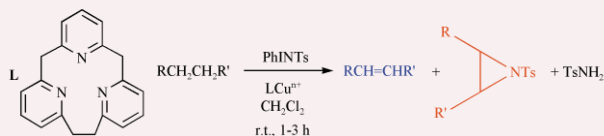


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Facile alkane functionalization in copper-[2.1.1]-(2,6)-pyridinophane-PhINTs systems

Andrei N. Vedernikov* and Kenneth G. Caulton*

Alkanes react with PhINTs under mild conditions in the presence of catalytic amounts of $LCuX_n-nNaBAR^F_4$ in dichloromethane solution to produce the corresponding *olefins*, aziridines, PhI and $TsNH_2$.

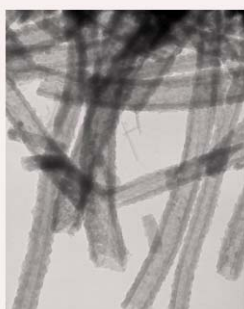


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Single-step *in situ* synthesis of double bond-grafted yttrium-hydroxide nanotube core-shell structures

Weijia Li, Xun Wang and Yadong Li*

Novel MMA- $Y(OH)_3$ nanotube core-shell structures have been successfully prepared with double bonds successfully grafted on the surface through a single-step *in-situ* hydrothermal method.

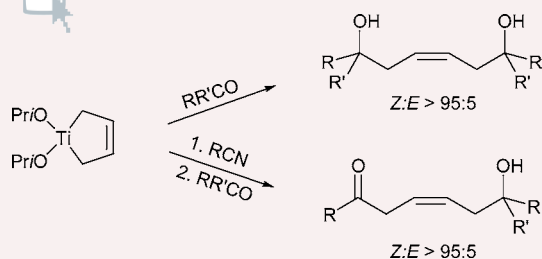


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Titanacyclopentene complexes and their application as 1,4-dicarbocation equivalents

Andreas Goeke,* Daniel Mertl and Stephanie Jork

Titanacyclopentenes are the putative intermediates in the $Ti(OiPr)_4$ -promoted 1,4-selective coupling of 3-butenylmagnesium chloride with various electrophiles. High *Z:E*-ratios were obtained in products with low to medium steric demand.

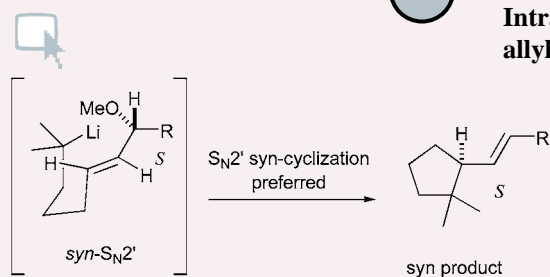


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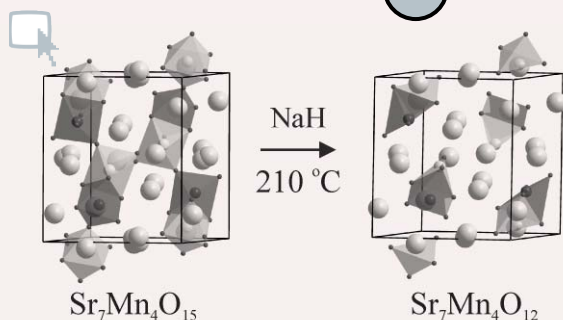
Intramolecular S_N2' cyclization of an alkyllithium species onto a methoxy allyl ether is *syn* selective

Thomas E. La Cruz and Scott D. Rychnovsky*

The preference for *syn*- or *anti*-addition of an intramolecular S_N2' cyclization of an alkyllithium species onto a methoxy allyl ether has been proven unequivocally to take place by a *syn* S_N2' mechanism.



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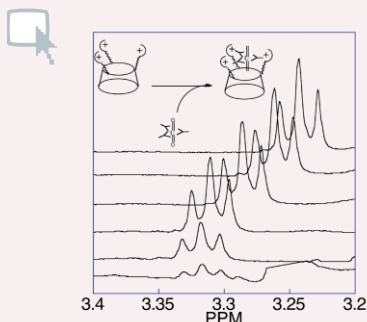


Selective deintercalation of apex over face-shared oxide ions in the topotactic reduction of $\text{Sr}_7\text{Mn}_4\text{O}_{15}$ to $\text{Sr}_7\text{Mn}_4\text{O}_{12}$

M. A. Hayward*

Selective deintercalation of the apex-shared oxide ions of $\text{Sr}_7\text{Mn}_4\text{O}_{15}$ yields $\text{Sr}_7\text{Mn}_4\text{O}_{12}$, a mixed valence manganese oxide with face-sharing manganese-oxygen coordination polyhedra.

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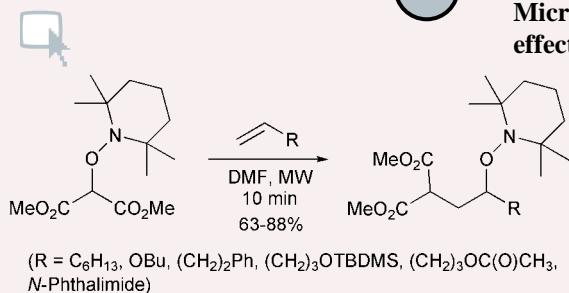


An outer-sphere ligand for uranyl carbonate

Anthony R. Prudden, Nathan R. Lien and Jason R. Telford*

The outer-sphere complexation of uranyl carbonate by a supramolecular host can be followed by NMR spectroscopy.

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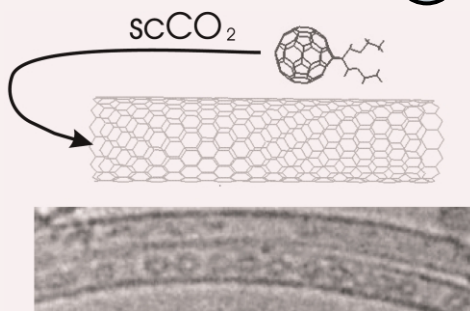


Microwave-assisted free radical chemistry using the persistent radical effect

Christian Wetter and Armido Studer*

Environmentally benign radical carboaminoxylations of various nonactivated olefins and difficult radical cyclization reactions are performed in good to excellent yields and with short reaction times under microwave irradiation.

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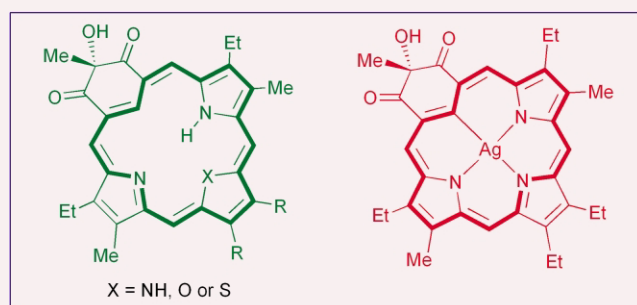


Selective host-guest interaction of single-walled carbon nanotubes with functionalised fullerenes

David A. Britz,* Andrei N. Khlobystov,* Jiawei Wang, Adam S. O'Neil, Martyn Poliakoff, Arzhang Ardavan and G. Andrew D. Briggs

Ester functionalised fullerenes were inserted into nanotubes using sccCO_2 without degrading functional groups. Carboxylate functionalised fullerenes aggregated to form a supramolecular complex on the surface of the nanotube, which sterically hindered encapsulation.

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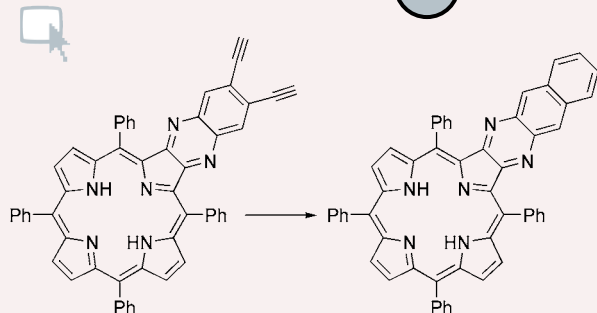


Preparation of tripyrrane analogues from resorcinol and 2-methylresorcinol for applications in the synthesis of new benziporphyrin systems

Kae Miyake and Timothy D. Lash*

Resorcinol and methylresorcinol reacted with 2 equiv. of an acetoxymethylpyrrole in the presence of acid catalysts to form 4,6-dihydroxy-1,3-bis(2-pyrrolylmethyl)benzenes that structurally resemble the tripyrranes; following deprotection of the terminal ester moieties, these underwent acid catalyzed condensations with dialdehydes to afford a series of novel benziporphyrins.

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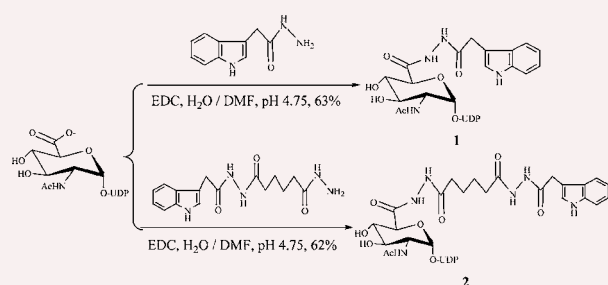


Synthesis and Bergman cyclization of a β -extended porphyrinediylne

John D. Spence,* Eric D. Cline, Domingo M. Llagostera and Patrick S. O'Toole

Condensation of a porphyrin-2,3-dione with a 1,2-diaminoarene affords a β -extended porphyrinic-enediylne. Upon thermal Bergman cyclization the quinoxaline spacer positioned between the macrocycle and the enediylne prevents tandem radical cyclization to a picenoporphyrin.

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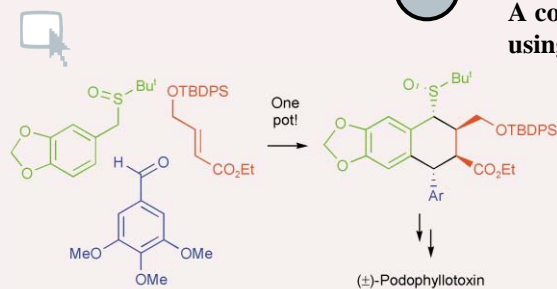


A fluorescent analogue of UDP-*N*-acetylglucosamine: application for FRET assay of peptidoglycan translocase II (MurG)

Jian-Jun Li and Timothy D. H. Bugg*

A direct continuous fluorescence assay for translocase II MurG based on fluorescence resonance energy transfer (FRET) has been developed using a 6-substituted fluorescent analogue of UDP-*N*-acetylglucosamine.

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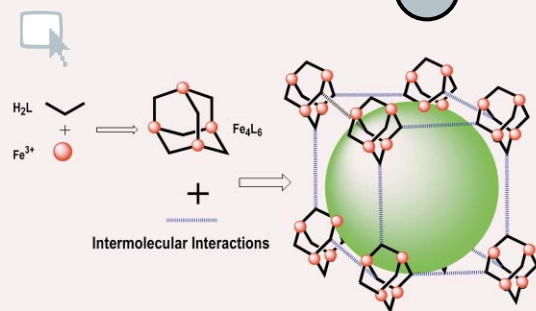


A concise stereocontrolled formal total synthesis of (\pm)-podophyllotoxin using sulfoxide chemistry

Mike Casey* and Claire M. Keaveney

A highly stereoselective *one-pot* construction of a tetralin is the key step in a concise new route to the important anti-cancer drug precursor (\pm)-podophyllotoxin.

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A three dimensional porous metal-organic framework [$\text{Fe}_4\text{L}_6 \cdot (\text{DMF})_3 \cdot (\text{H}_2\text{O})_{10}$] constructed from neutral discrete Fe_4L_6 pyramids [H_2L = 1,3-benzodihydroxamic acid]

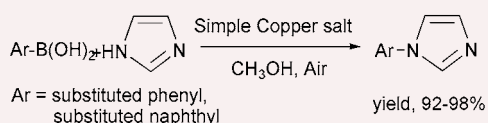
Yan Bai, Dong Guo, Chun-ying Duan,* Dong-bin Dang, Ke-liang Pang and Qing-jin Meng*

A 3-D porous zeolite-like metal-organic framework assembled from a well-defined tetrahedral Fe_4L_6 cavity by the cooperativity of hydrogen bonds and π - π stacking showing the ability to survive guest removal.

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A simple copper salt catalysed the coupling of imidazole with arylboronic acids in protic solvent

Jing-Bo Lan, Li Chen, Xiao-Qi Yu,* Jing-Song You and Ru-Gang Xie*

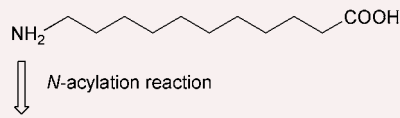


In the presence of a catalytic amount of a simple copper salt, the coupling of imidazole with arylboronic acids was performed in methanol to give corresponding *N*-arylimidazoles in almost quantitative yields.

190

11-Aminoundecanoic acid: a versatile unit for the generation of low molecular weight gelators for water and organic solvents

Anthony D'Aléo, Jean-Luc Pozzo, Frédéric Fages,* Marc Schmutz, Gudrun Mieden-Gundert, Fritz Vögtle,* Vesna Caplar and Mladen Zinic*



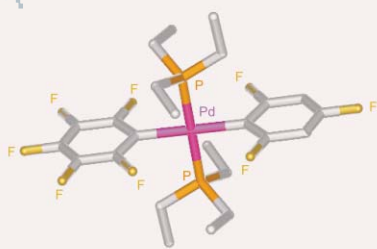
New gelators of organic solvents and water

11-Aminoundecanoic acid represents a powerful building-block for the systematic, easy synthesis of efficient gelators, including chiral ones. Unprecedentedly, some racemates are found to be stronger gelators than the corresponding pure enantiomers.

192

Synthesis and structural characterization of the first unsymmetrical diarylpalladium complex *trans*-Pd(C₆F₅)(2,4,6-C₆F₃H₂)(PEt₃)₂, derived from transmetallation between 2,4,6-trifluorophenylboronic acid and *trans*-Pd(C₆F₅)I(PEt₃)₂

Yasushi Nishihara, Hiroyuki Onodera and Kohtaro Osakada*

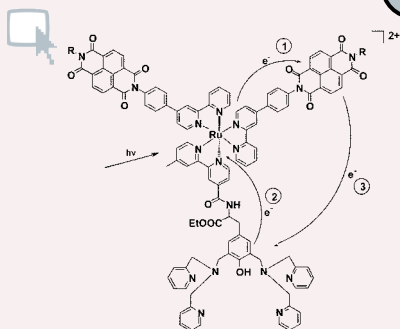


The first example of an X-ray analysis for an unsymmetrical diarylpalladium(II) complex that contains fluorine atoms in the ortho positions, is accessible *via* transmetallation of an arylboronic acid in the presence of Ag₂O.

194

Intramolecular charge separation in a hydrogen bonded tyrosine–ruthenium(II)–naphthalene diimide triad

Olof Johansson, Henriette Wolpher, Magnus Borgström, Leif Hammarström,* Jonas Bergquist, Licheng Sun and Björn Åkermark*

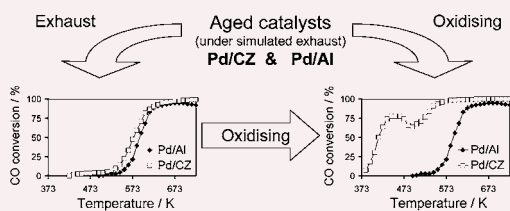


Long-lived charge-separated states in the ns to μs range were observed upon laser flash excitation of a donor–chromophore–acceptor triad based on tris(bipyridine) ruthenium(II) as photo-sensitizer, naphthalene diimide as acceptor, and a hydrogen bonded phenol as donor.

196

Reactivation of aged model Pd/Ce_{0.68}Zr_{0.32}O₂ three-way catalyst by high temperature oxidising treatment

N. Hickey, P. Fornasiero, R. Di Monte, J. Kašpar,* J. R. González-Velasco,* M. A. Gutiérrez-Ortiz, M. P. González-Marcos, J. M. Gatica and S. Bernal*

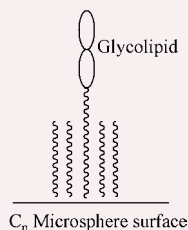


Pd/Ce_{0.68}Zr_{0.32}O₂ (PdCZ) catalyst is remarkably reactivated when subjected to a high temperature oxidising treatment whereas this effect is only marginal for a conventional Pd/Al₂O₃ (PdAl), indicating the importance of Pd–Ce_{0.68}Zr_{0.32}O₂ interactions in obtaining highly active catalysts.

198

C_n microspheres as surrogate membranes in glycosidase-catalysed hydrolysis of glycolipids

José A. R. Martins, David H. G. Crout* and Peter Critchley



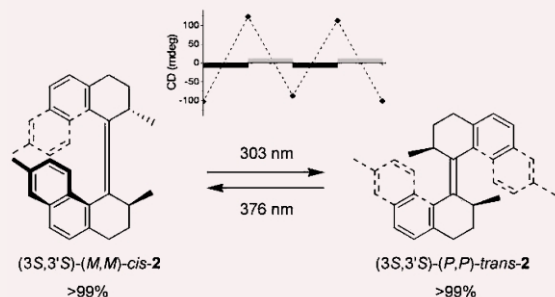
Glycosidase catalysed hydrolysis of glycolipids non-covalently attached to C_n microspheres proceeds to completion for appropriate glycolipid-microsphere combinations.

200

A chiroptical molecular switch with perfect stereocontrol

Richard A. van Delden, Matthijs K. J. ter Wiel and Ben L. Feringa*

A modified version of the first generation unidirectional molecular motor showed >99% stereoselectivity in photo-induced isomerizations in both directions, thus functioning as a perfect chiroptical molecular switch.

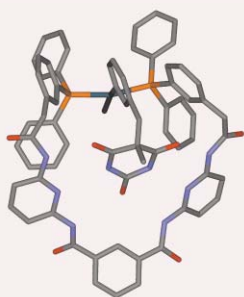


202

Preparation of a novel diphosphine–palladium macrocyclic complex possessing a molecular recognition site. Oxidative addition studies

Jens Larsen, Brian S. Rasmussen, Rita G. Hazell and Troels Skrydstrup*

A diphosphine–palladium(0) complex capable of recognising barbiturates has been prepared. Oxidative addition studies with a barbiturate:aryl iodide conjugate reveal how molecular recognition can control the positioning of a Pd(II)-bound aryl group.

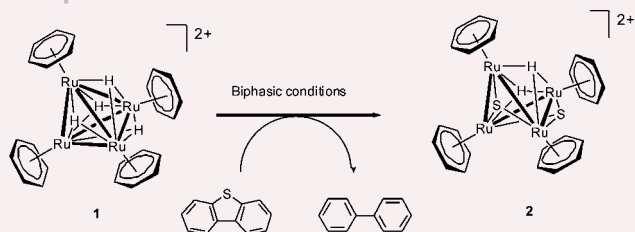


204

Elimination of sulfur from aromatic heterocycles by a water-soluble arene ruthenium cluster: synthesis and molecular structure of $[\text{H}_2\text{S}_2\text{Ru}_4(\text{C}_6\text{H}_6)_4]\text{Cl}_2$

Frédéric Chérioux,* Bruno Therrien and Georg Süß-Fink

C–S bond cleavage in thiophene, benzothiophene and dibenzothiophene is achieved under biphasic conditions by the water-soluble cluster cation $[\text{H}_4\text{Ru}_4(\text{C}_6\text{H}_6)_4]^{2+}$ which is converted into the disulfido cluster $[\text{H}_2\text{S}_2\text{Ru}_4(\text{C}_6\text{H}_6)_4]^{2+}$.

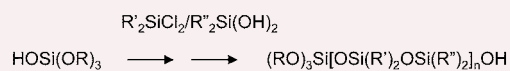


206

Stepwise synthesis of siloxane chains

Zhixiang Chang, Mayfair C. Kung and Harold H. Kung*

Siloxane chains of designated lengths can be synthesized with high yields by reacting tris(*tert*-butoxy)silanol alternately with dichlorosilane and silanediol.



208

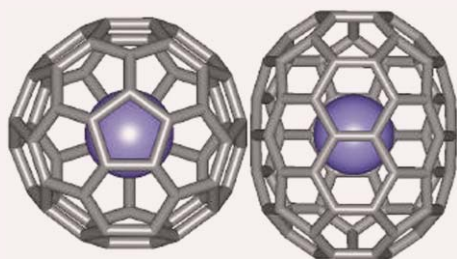
Small molecule hydrogels based on a class of antiinflammatory agents

Zhimou Yang, Hongwei Gu, Yan Zhang, Ling Wang and Bing Xu*

Small molecule hydrogels formed by the combination of two *N*-(fluorenyl-methoxycarbonyl) amino acids, a novel class of antiinflammatory agents, suggest a useful approach to the design of biomaterials.



210

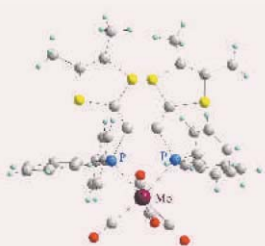


Purification by HPLC and the UV/Vis absorption spectra of the nitrogen-containing *incar*-fullerenes *iNC*₆₀, and *iNC*₇₀

Mito Kanai, Kyriakos Porfyrakis, G. Andrew. D. Briggs and T. John S. Dennis*

The nitrogen-containing *incar*-fullerenes *iNC*₆₀ and *iNC*₇₀, have been purified and characterised by UV-Vis absorption spectroscopy.

212

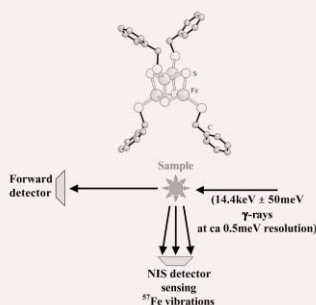


Unprecedented metal template effect on the coupling of dithiafulvene moieties

Dominique Lorcy,* Michel Guerro, Pascal Pellon and Roger Carlier

The first approach to an original vinylphosphine, the dithiafulvenyldiphenylphosphine, and its chelating ability towards the Mo(CO)₄ fragment are reported. Upon oxidation, the Mo(CO)₄ complex incorporating two such ligands leads to a novel metallacycle substituted by a redox active vinylogous tetrathiafulvalene.

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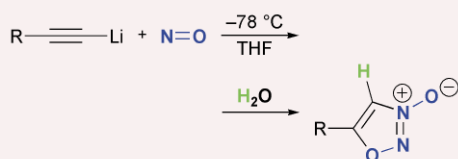


Nuclear inelastic scattering spectroscopy of iron–sulfur cubane compounds

Vasily S. Oganessian, J. Elaine Barclay, Sinead M. Hardy, David J. Evans, Christopher J. Pickett and Upali A. Jayasooriya*

The potential of NIS spectroscopy to study the iron–sulfur clusters in metalloproteins is illustrated using model compounds. The origin of the intense low energy transfer bands is discussed.

216

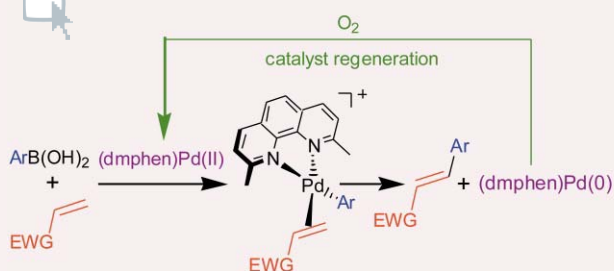


An efficient chemical fixation of nitric oxide: convenient and practical synthesis of 1,2,3-oxadiazole 3-oxides

Takumichi Sugihara,* Kimiko Kuwahara, Akihito Wakabayashi, Hiroko Takao, Hiroshi Imagawa and Mugio Nishizawa

Nitric oxide reacts efficiently with alkynyllithium at low temperature producing 1,2,3-oxadiazole 3-oxides in good yields.

218

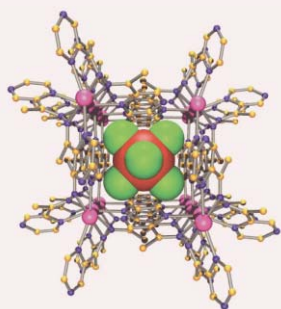


The first ligand-modulated oxidative Heck vinylation. Efficient catalysis with molecular oxygen as palladium(0) oxidant

Murugaiah M. S. Andappan, Peter Nilsson and Mats Larhed*

The discovery of ligand-promoted Pd(II)-catalysed vinylation of arylboronic acids, low catalyst loading, oxidatively stable ligand, and dioxygen as clean oxidant of Pd(0) are the highlights.

220

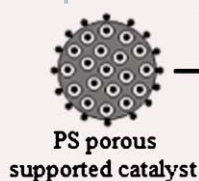


Novel organic–inorganic composite coordination polymers generated from new multidentate schiff-base ligand and Ag(I) salts

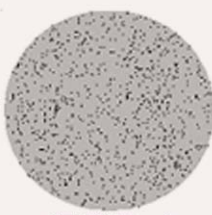
Yu-Bin Dong,* Xia Zhao, Bo Tang, Huai-You Wang, Ru-Qi Huang, Mark D. Smith and Hans-Conrad zur Loye

Two novel luminescent organic–inorganic coordination polymers were synthesized based on a new multidentate Schiff-base ligand and Ag(I) salts. Two compounds exhibit a non-interpenetrating 3-D network and a square 1-D tube in the solid state, respectively.

222



Polymerization of ethylene



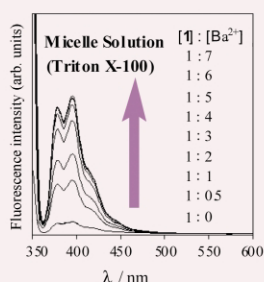
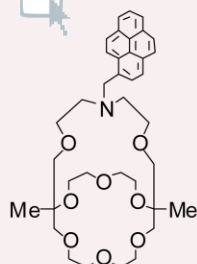
A novel route to polyethylene–polystyrene blends through the fragmentation of porous polystyrene beads supported metallocene in ethylene polymerization

Yongxin Qin, Tao Tang* and Zhongfu Zhao

PE–PS blends were synthesized *via in situ* ethylene polymerization with porous polystyrene particles supported metallocene. This approach allows a nano-scale dispersion of PS in a PE matrix in the absence of a compatibilizer.

• Catalyst ; PS fragmentation ; PE content ;

224

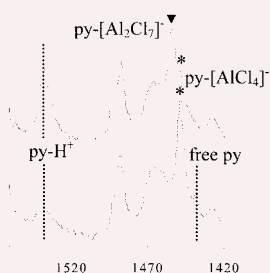


A novel fluorescent indicator for Ba²⁺ in aqueous micellar solutions

Yoshio Nakahara, Toshiyuki Kida, Yohji Nakatsuji* and Mitsuru Akashi*

The highly selective and sensitive fluorescence detection of Ba²⁺ among alkali metal and alkaline earth metal cations was successfully achieved in aqueous media by the combination of a novel monoazacryptand type of fluorophore and micelles of Triton X-100.

226

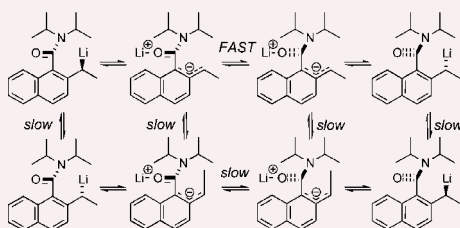


Determination of the Lewis acidity of ionic liquids by means of an IR spectroscopic probe

Ya-li Yang and Yuan Kou*

A novel method was described for the identification of the Lewis/Brønsted acidity of ionic liquids and the comparison of the Lewis acidic strength.

228

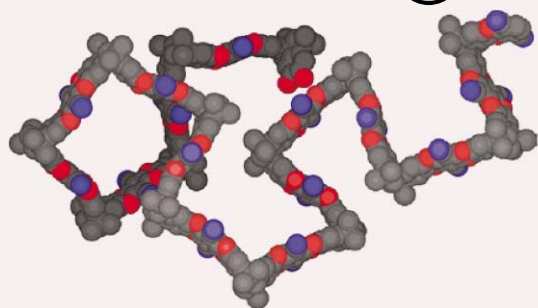


Fast racemisation and slow epimerisation of laterally lithiated amides: stereochemical evidence for the mechanism of inversion of amide-substituted benzylolithiums

Jonathan Clayden,* Christopher C. Stimson, Martine Keenan and Andrew E. H. Wheatley

Laterally lithiated amides can racemise much faster than they epimerise. Concerted Ar–CO rotation and inversion at the C–Li centre must therefore be faster than either of the independent rotation or inversion processes, indicative of a “conducted tour” mechanism for racemisation.

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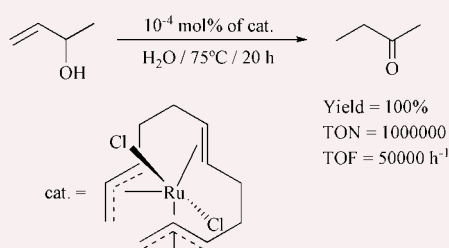


Polymers of intrinsic microporosity (PIMs): robust, solution-processable, organic nanoporous materials

Peter M. Budd, Bader S. Ghanem, Saad Makhseed, Neil B. McKeown,*
Kadhun J. Msayib and Carin E. Tattershall

Microporous materials can be derived directly from soluble polymers whose randomly contorted shapes prevent an efficient packing of the macromolecules in the solid state.

232

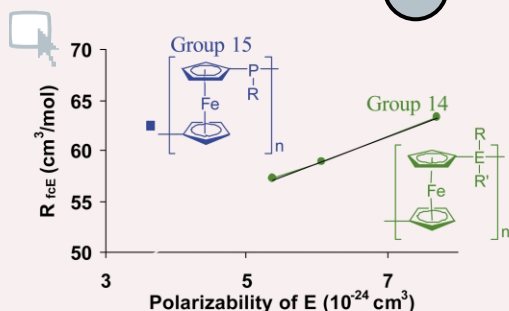


Dichloro(dodeca-2,6,10-triene-1,12-diyl)ruthenium(IV): a highly efficient catalyst for the isomerization of allylic alcohols into carbonyl compounds in organic and aqueous media

Victorio Cadierno,* Sergio E. García-Garrido and José Gimeno*

The bis(allyl)-ruthenium(IV) complex [Ru(η³:η²:η³-C₁₂H₁₈)Cl₂] (C₁₂H₁₈ = dodeca-2,6,10-triene-1,12-diyl) has been found to be an efficient catalyst for the isomerization of allylic alcohols into carbonyl compounds both in THF and water as solvent.

234

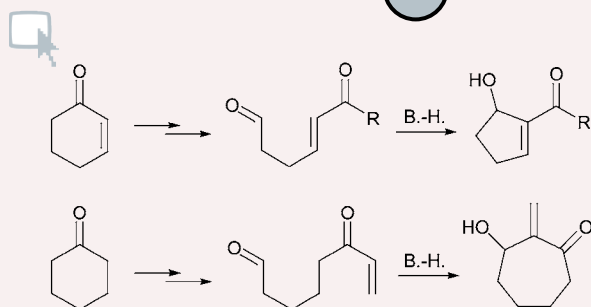


Polyferrocenes: metallopolymers with tunable and high refractive indices

Chantal Paquet, Paul W. Cyr, Eugenia Kumacheva* and Ian Manners*

The refractive index, molar refraction and Abbé number of polyferrocene derivatives are reported and the values indicate that these materials are very promising for a range of photonics applications.

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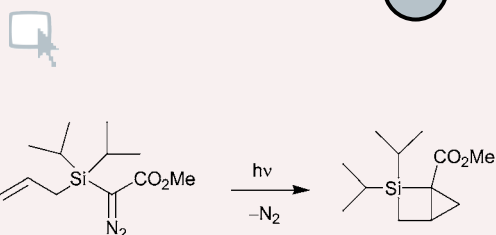


The intramolecular Baylis–Hillman reaction: easy preparation of versatile substrates, facile reactions, and synthetic applications

Jung Eun Yeo, Xiuling Yang, Hee Jin Kim and Sangho Koo*

Easy preparation of ω-formyl-α,β-unsaturated carbonyl compounds and their facile intramolecular Baylis–Hillman reactions can be applied to the efficient syntheses of useful cyclic frameworks for polycyclic natural products.

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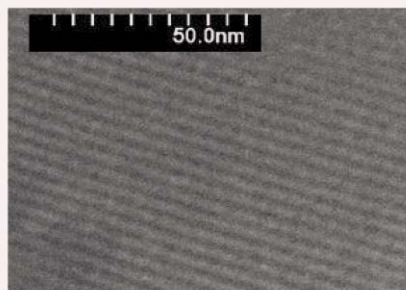


Synthesis and ring opening reactions of a 2-silabicyclo[2.1.0]pentane

Gerhard Maas,* Birgit Daucher, Alexandra Maier and Voker Gettwert

The first 2-silabicyclo[2.1.0]pentane was synthesized and found to undergo different ring opening reactions, including formation of an allyl(alkoxysilyl)ketene.

240

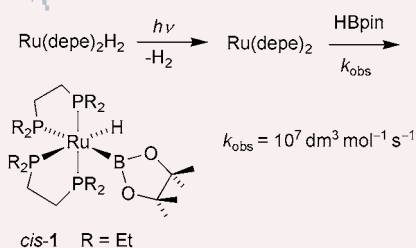


Synthesis and characterization of organic–inorganic hybrid mesoporous silica materials with new templates

Byunghwan Lee, Huimin Luo, C. Y. Yuan, J. S. Lin and Sheng Dai*

A new surfactant system has been successfully explored for a self-assembly synthesis of periodic mesoporous organosilica (PMO) materials.

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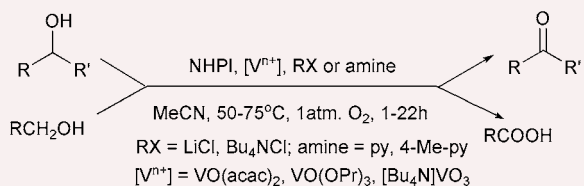


Photochemical oxidative addition of B–H bonds at ruthenium and rhodium

Philip L. Callaghan, Rodrigo Fernández-Pacheco, Naser Jasim, Sébastien Lachaize, Todd B. Marder, Robin N. Perutz,* Eleonora Rivalta and Sylviane Sabo-Etienne

B–H oxidative addition occurs on photolysis of metal phosphine dihydrides in the presence of HB(pin); the rate of the elementary step of B–H oxidative addition lies between those for the corresponding oxidative addition reactions of Et₃SiH and dihydrogen.

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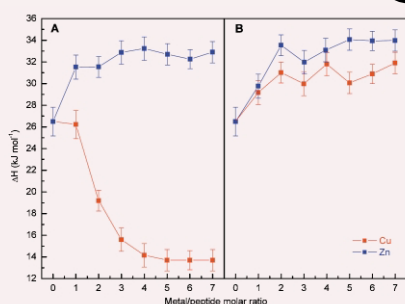


New efficient aerobic oxidation of some alcohols with dioxygen catalysed by *N*-hydroxyphthalimide with vanadium co-catalysts

Paweł J. Figiel, Jarosław M. Sobczak* and Józef J. Ziółkowski

New efficient vanadium co-catalysts have been developed for the oxidation of some alcohols with O₂ catalysed by *N*-hydroxyphthalimide (NHPI). Various alcohols (primary and secondary) were selectively oxidized by O₂ under mild conditions with high conversions (from 72 to 96%) and selectivities (66–100%) after 1–22 hours.

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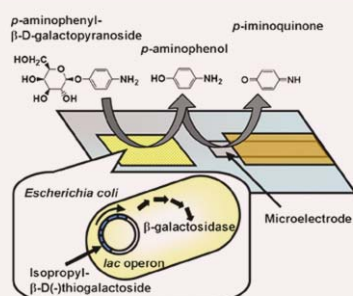


The different role of Cu⁺⁺ and Zn⁺⁺ ions in affecting the interaction of prion peptide PrP106-126 with model membranes

Domenico Grasso,* Danilo Milardi, Carmelo La Rosa and Enrico Rizzarelli

Differential scanning calorimetric (DSC) experiments have shown that the ability of PrP106-126 to perturb 1,3-dipalmitoyl-*sn*-glycero-3-phosphocholine (DPPC) model membranes is differently affected by Cu⁺⁺ and Zn⁺⁺ ions.

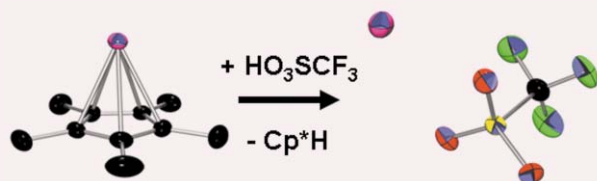
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On-chip electrochemical measurement of β -galactosidase expression using a microbial chip

Takatoshi Kaya, Kuniaki Nagamine, Nobuto Matsui, Tomoyuki Yasukawa, Hitoshi Shiku and Tomokazu Matsue*

β -Galactosidase expression in a small number of *Escherichia coli* cells embedded in collagen gel has been measured in real time with an electrochemical sensor chip using *p*-aminophenyl β -D-galactopyranoside as a substrate.



Indium(I) trifluoromethanesulfonate and other soluble salts for univalent indium chemistry

Charles L. B. Macdonald,* Andrea M. Corrente, Christopher G. Andrews, Alexis Taylor and Bobby D. Ellis

We report the synthesis, structure and preliminary reactivity studies of a series of unusually soluble indium(I) salts that are improved alternatives to indium(I) halide reagents.

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