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

contents

Chemical Communications
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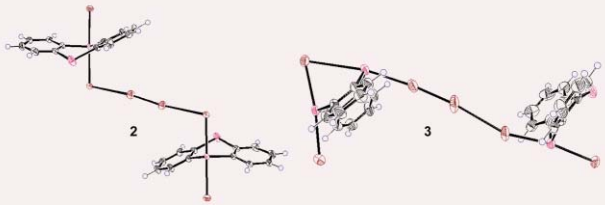
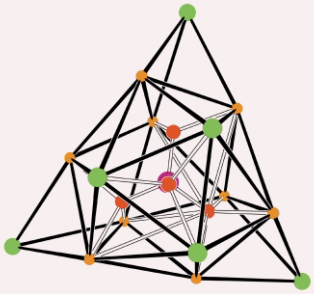
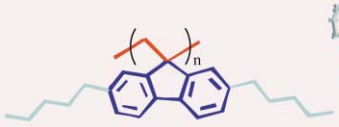
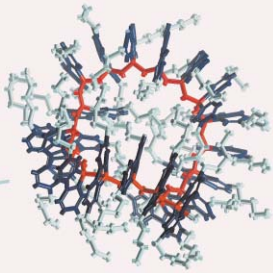
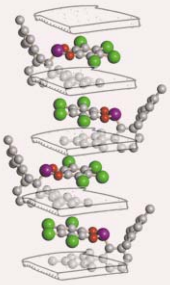


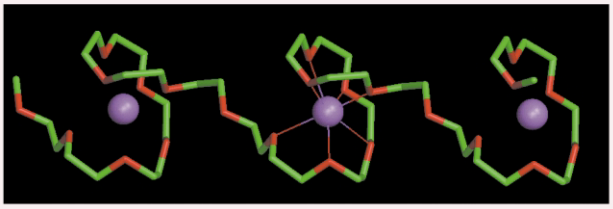




optically active poly(PDBF)







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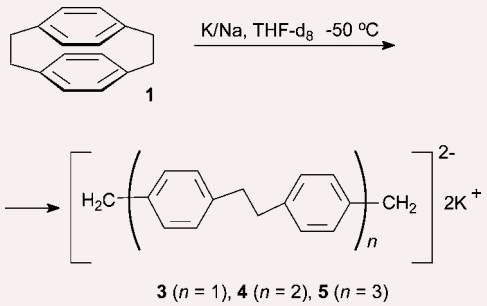

NMR and computational studies of the chemical reduction of [2.2]paracyclophane: formation of dianionic *p*-xylenyl oligomers

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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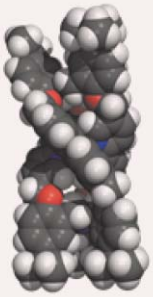

Inherent helicity in an extended tris-bipyridyl molecular cage

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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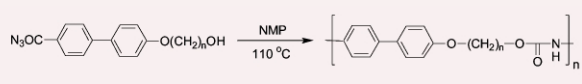

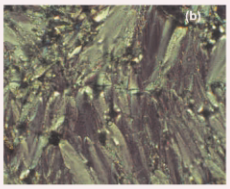

Synthesis of new thermotropic liquid crystalline polyurethanes containing biphenyl mesogens using a novel AB-type self-polycondensation

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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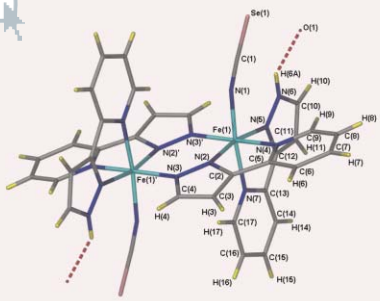

Structure and magnetism of a new pyrazolate bridged iron(II) spin crossover complex displaying a single HS–HS to LS–LS transition

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

The dinuclear iron(II) complex [(pypzH)(NCSe)Fe(μ-pypz)$_2$Fe(NCSe)(pypzH)]·2H$_2$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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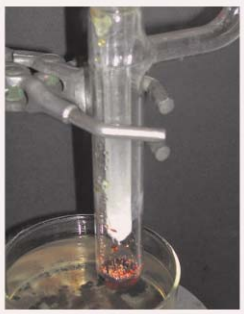


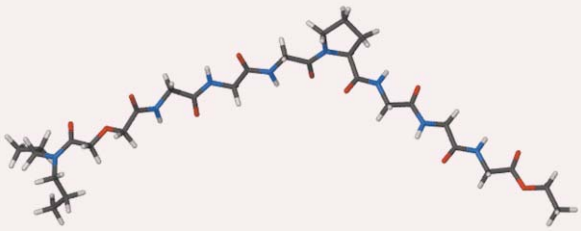
The regiospecific Fischer indole reaction in choline chloride·2ZnCl$_2$ with product isolation by direct sublimation from the ionic liquid

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·2ZnCl$_2$; 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.

160

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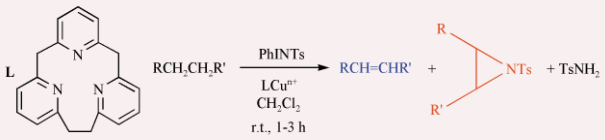
Facile alkane functionalization in copper-[2.1.1]-(2,6)-pyridinophane-PhINTs systems



Andrei N. Vedernikov* and Kenneth G. Caulton*

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

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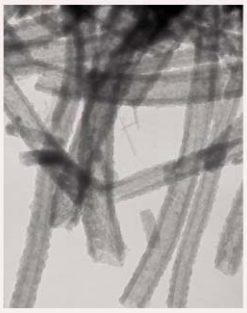
Single-step *in situ* synthesis of double bond-grafted yttrium-hydroxide nanotube core-shell structures



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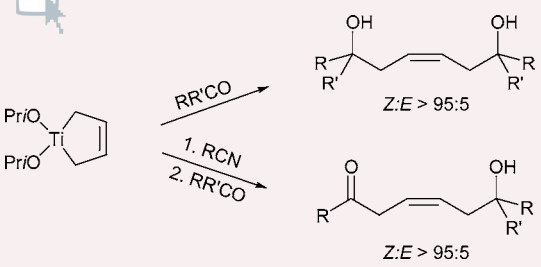
Titanacyclopentene complexes and their application as 1,4-dicarbanion equivalents



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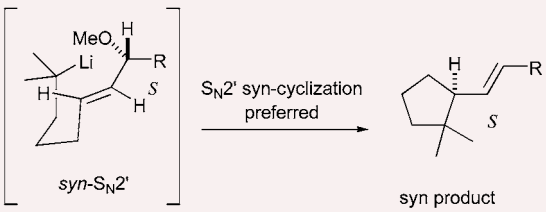
Intramolecular S_N2' cyclization of an alkyllithium species onto a methoxy allyl ether is *syn* selective



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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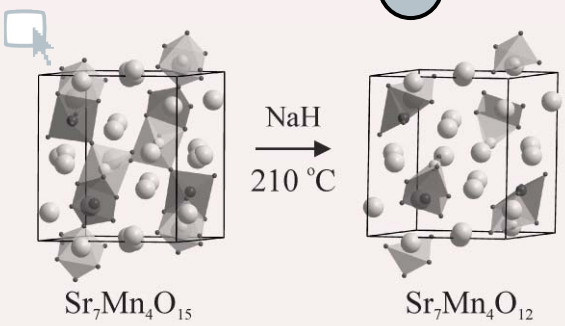

Selective deintercalation of apex over face-shared oxide ions in the topotactic reduction of $Sr_7Mn_4O_{15}$ to $Sr_7Mn_4O_{12}$

M. A. Hayward*

Selective deintercalation of the apex-shared oxide ions of $Sr_7Mn_4O_{15}$ yields $Sr_7Mn_4O_{12}$, a mixed valence manganese oxide with face-sharing manganese-oxygen coordination polyhedra.

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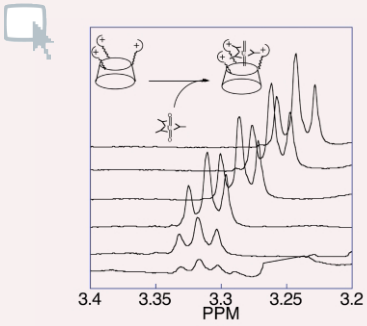

An outer-sphere ligand for uranyl carbonate

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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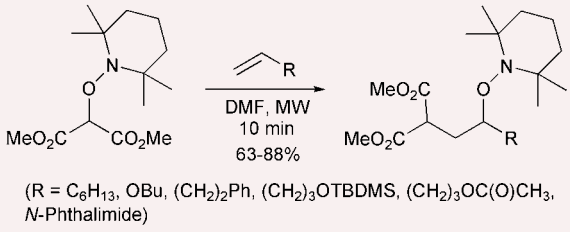

(R = C_6H_{13}, OBu, $(CH_2)_2Ph$, $(CH_2)_3OTBDMS$, $(CH_2)_3OC(O)CH_3$, *N*-Phthalimide)

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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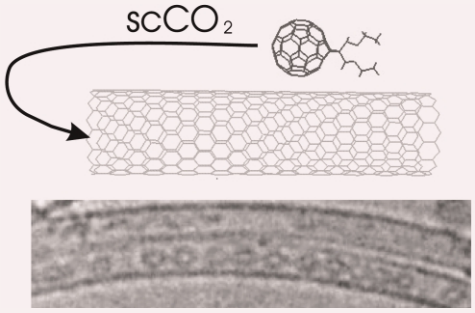

Selective host–guest interaction of single-walled carbon nanotubes with functionalised fullerenes

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 $scCO_2$ 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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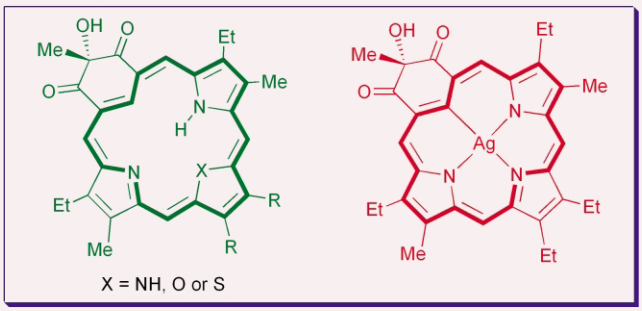

Preparation of tripyrrane analogues from resorcinol and 2-methylresorcinol for applications in the synthesis of new benziporphyrin systems

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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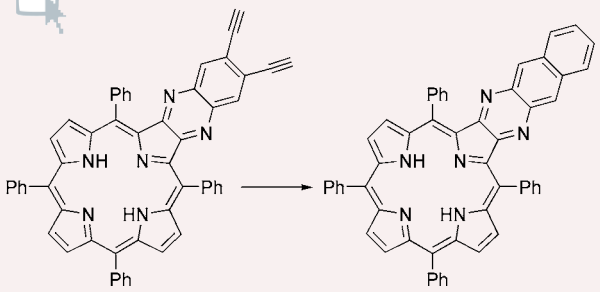

Synthesis and Bergman cyclization of a β-extended porphyrenediyne

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-diaminoarenediyne affords a β-extended porphyrinic-enediyne. Upon thermal Bergman cyclization the quinoxaline spacer positioned between the macrocycle and the enediyne prevents tandem radical cyclization to a picenoporphyrin.

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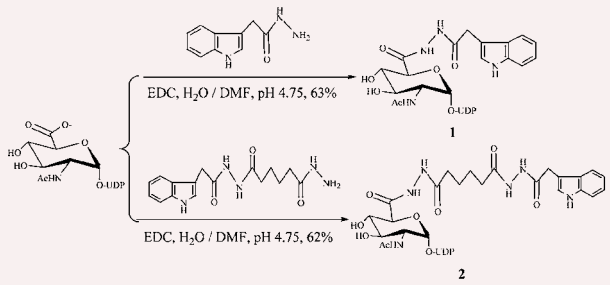

A fluorescent analogue of UDP-*N*-acetylglucosamine: application for FRET assay of peptidoglycan translocase II (MurG)

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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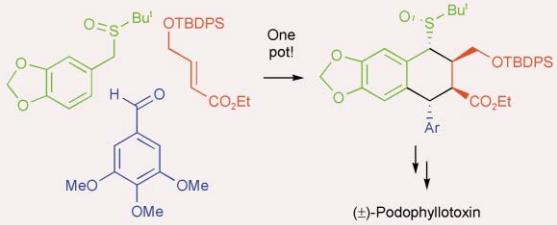

A concise stereocontrolled formal total synthesis of (±)-podophyllotoxin using sulfoxide chemistry

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 (±)-podophyllotoxin.

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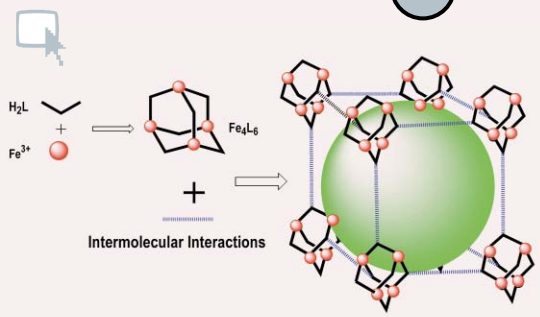

A three dimensional porous metal–organic framework $[Fe_4L_6\cdot(DMF)_3\cdot(H_2O)_{10}]$ constructed from neutral discrete Fe_4L_6 pyramids [H_2L = 1,3-benzodihydroxamix acid]

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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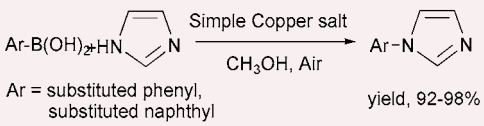
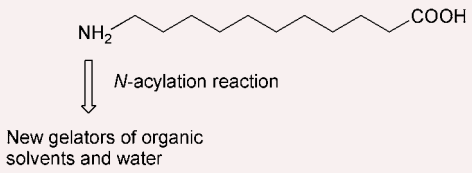


A simple copper salt catalysed the coupling of imidazole with arylboronic acids in protic solvent

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

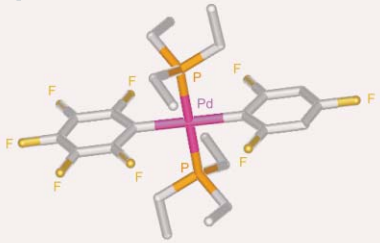
In the presence of a catalytic amount of a simple copper salt, the coupling of imidazole with arylboronic acids was performed in methanol to give corresponding *N*-arylimidazoles in almost quantitative yields.



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*

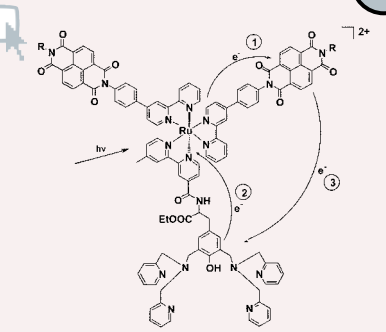
11-Aminoundecanoic acid represents a powerful building-block for the systematic, easy synthesis of efficient gelators, including chiral ones. Unprecedentedly, some racemates are found to be stronger gelators than the corresponding pure enantiomers.



Synthesis and structural characterization of the first unsymmetrical diarylpalladium complex *trans*-Pd(C_6F_5)(2,4,6-$C_6F_3H_2$)(PEt_3)$_2$, derived from transmetallation between 2,4,6-trifluorophenylboronic acid and *trans*-Pd(C_6F_5)I(PEt_3)$_2$

Yasushi Nishihara, Hiroyuki Onodera and Kohtaro Osakada*

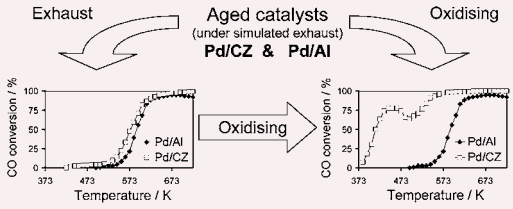
The first example of an X-ray analysis for an unsymmetrical diarylpalladium(II) complex that contains fluorine atoms in the ortho positions, is accessible *via* transmetallation of an arylboronic acid in the presence of Ag_2O.



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*

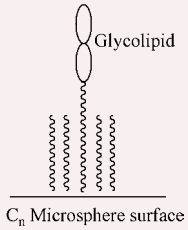
Long-lived charge-separated states in the ns to μs range were observed upon laser flash excitation of a donor–chromophore–acceptor triad based on tris(bipyridine) ruthenium(II) as photo-sensitizer, naphthalene diimide as acceptor, and a hydrogen bonded phenol as donor.



Reactivation of aged model Pd/$Ce_{0.68}Zr_{0.32}O_2$ 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*

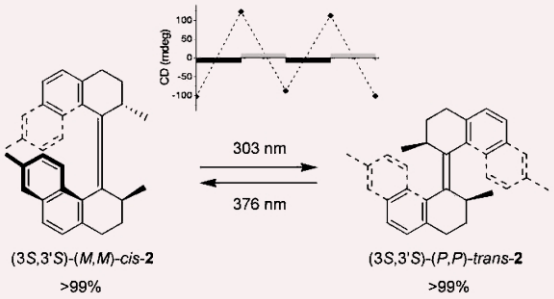
Pd/$Ce_{0.68}Zr_{0.32}O_2$ (PdCZ) catalyst is remarkably reactivated when subjected to a high temperature oxidising treatment whereas this effect is only marginal for a conventional Pd/Al_2O_3 (PdAl), indicating the importance of Pd–$Ce_{0.68}Zr_{0.32}O_2$ interactions in obtaining highly active catalysts.



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

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

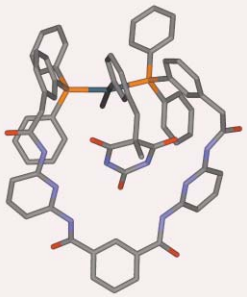
Glycosidase catalysed hydrolysis of glycolipids non-covalently attached to C_n microspheres proceeds to completion for appropriate glycolipid-microsphere combinations.



A chiroptical molecular switch with perfect stereocontrol

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

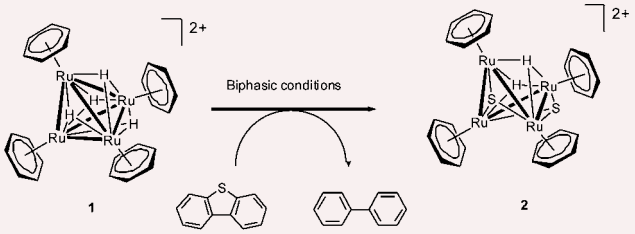
A modified version of the first generation unidirectional molecular motor showed >99% stereoselectivity in photo-induced isomerizations in both directions, thus functioning as a perfect chiroptical molecular switch.



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*

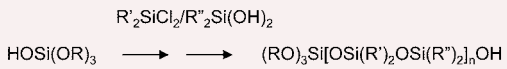
A disphosphine–palladium(0) complex capable of recognising barbiturates has been prepared. Oxidative addition studies with a barbiturate:aryl iodide conjugate reveal how molecular recognition can control the positioning of a Pd(II)-bound aryl group.



Elimination of sulfur from aromatic heterocycles by a water-soluble arene ruthenium cluster: synthesis and molecular structure of $[H_2S_2Ru_4(C_6H_6)_4]Cl_2$

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 $[H_4Ru_4(C_6H_6)_4]^{2+}$ which is converted into the disulfido cluster $[H_2S_2Ru_4(C_6H_6)_4]^{2+}$.



Stepwise synthesis of siloxane chains

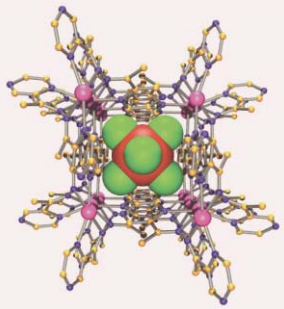
Zhixiang Chang, Mayfair C. Kung and Harold H. Kung*

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

Small molecule hydrogels based on a class of antiinflammatory agents

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

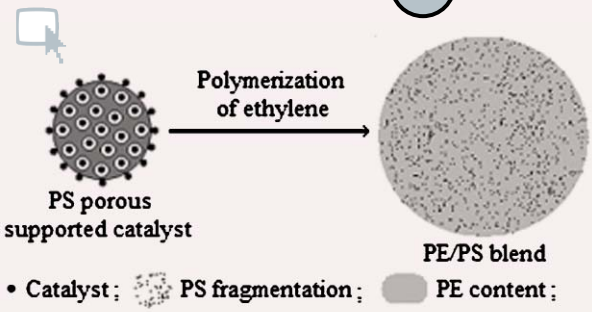
Small molecule hydrogels formed by the combination of two *N*-(fluorenylmethoxycarbonyl) amino acids, a novel class of antiinflammatory agents, suggest a useful approach to the design of biomaterials.



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

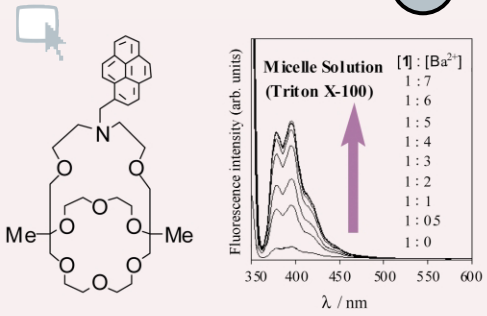
Two novel luminescent organic–inorganic coordination polymers were synthesized based on a new multidentate Schiff-base ligand and Ag(I) salts. Two compounds exhibit a non-interpenetrating 3-D network and a square 1-D tube in the solid state, respectively.



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

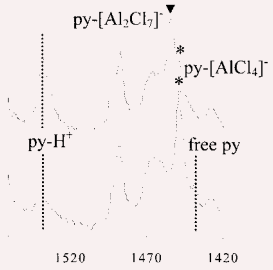
PE–PS blends were synthesized *via in situ* ethylene polymerization with porous polystyrene particles supported metallocene. This approach allows a nano-scale dispersion of PS in a PE matrix in the absence of a compatibilizer.



A novel fluorescent indicator for Ba^{2+} in aqueous micellar solutions

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

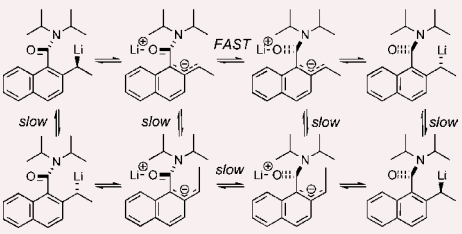
The highly selective and sensitive fluorescence detection of Ba^{2+} among alkali metal and alkaline earth metal cations was successfully achieved in aqueous media by the combination of a novel monoazacryptand type of fluorophore and micelles of Triton X-100.



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

Ya-li Yang and Yuan Kou*

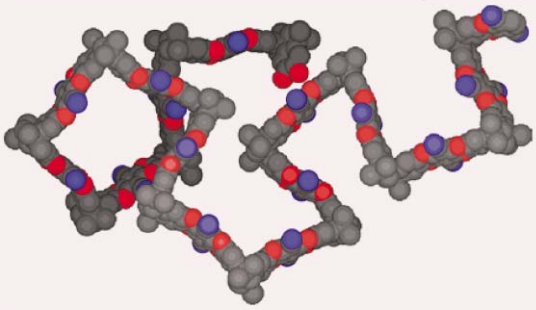
A novel method was described for the identification of the Lewis/Brønsted acidity of ionic liquids and the comparison of the Lewis acidic strength.



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

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

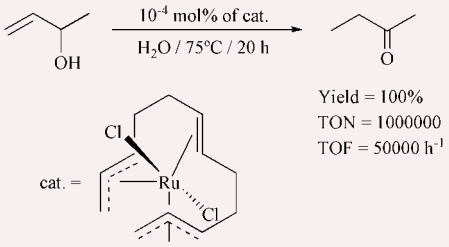
Laterally lithiated amides can racemise much faster than they epimerise. Concerted Ar–CO rotation and inversion at the C–Li centre must therefore be faster than either of the independent rotation or inversion processes, indicative of a "conducted tour" mechanism for racemisation.



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

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

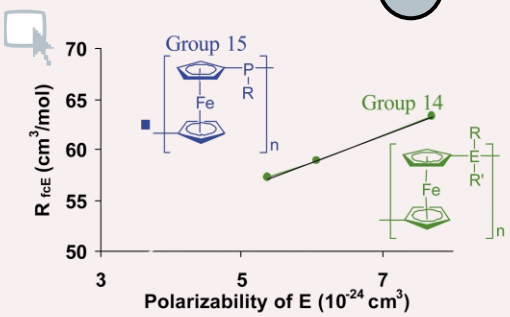
Microporous materials can be derived directly from soluble polymers whose randomly contorted shapes prevent an efficient packing of the macromolecules in the solid state.



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*

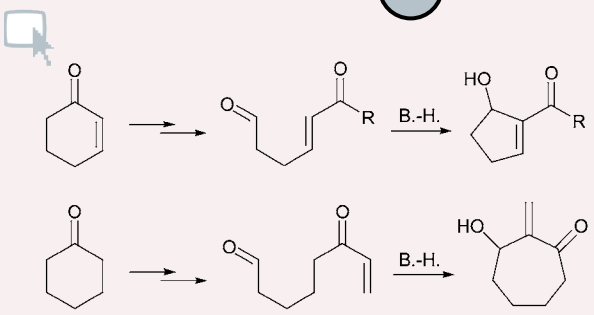
The bis(allyl)-ruthenium(IV) complex [Ru(η^3:η^2:η^3-$C_{12}H_{18}$)Cl_2] ($C_{12}H_{18}$ = dodeca-2,6,10-triene-1,12-diyl) has been found to be an efficient catalyst for the isomerization of allylic alcohols into carbonyl compounds both in THF and water as solvent.



Polyferrocenes: metallopolymers with tunable and high refractive indices

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

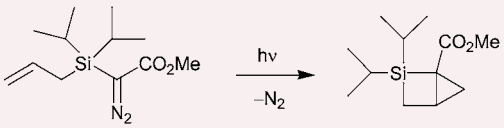
The refractive index, molar refraction and Abbé number of polyferrocene derivatives are reported and the values indicate that these materials are very promising for a range of photonics applications.



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.



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.

COMMUNICATIONS

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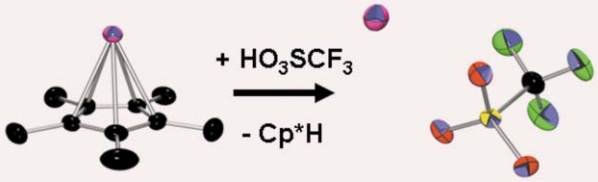
Indium(I) trifluoromethanesulfonate and other soluble salts for univalent indium chemistry



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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