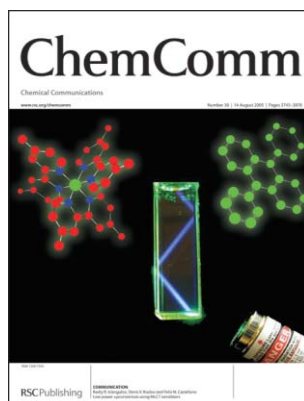
**Cover**

See Philip A. Gale, Mark E. Light, Beth McNally, Korakot Navakhun, Kate E. Sliwinski and Bradley D. Smith, page 3773. The cover image depicts a lipid bilayer rendered permeable to chloride by a synthetic prodigiosin mimic. The authors would like to thank Christopher J. Woods for this excellent cover illustration. Image reproduced by permission of Philip A. Gale *et al.*, from *Chem. Commun.*, 2005, 3773.

**Inside cover**

See Radiy R. Islangulov, Denis V. Kozlov and Felix N. Castellano, page 3776. Efficient green-to-blue photon upconversion is realized from selective excitation of a Ru(II) chromophore in the presence of anthracene or diphenylanthracene. Image reproduced by permission of Felix N. Castellano *et al.*, from *Chem. Commun.*, 2005, 3776.

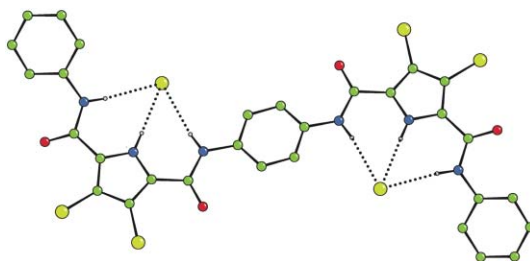
## FEATURE ARTICLE

3761

**Amidopyrroles: from anion receptors to membrane transport agents**

Philip A. Gale\*

Amidopyrroles have been employed in a variety of anion receptors and sensors and in membrane transport agents for HCl.



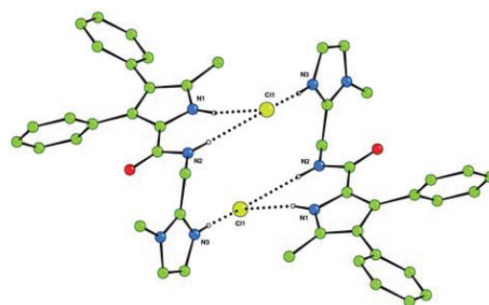
## COMMUNICATIONS

3773

**Co-transport of H<sup>+</sup>/Cl<sup>-</sup> by a synthetic prodigiosin mimic**

Philip A. Gale,\* Mark E. Light, Beth McNally, Korakot Navakhun, Kate E. Sliwinski and Bradley D. Smith\*

An amidopyrrole with appended imidazole group can bind and co-transport H<sup>+</sup>/Cl<sup>-</sup> across vesicle membranes much more effectively than an analogue with an appended pyridyl group.



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3776

### Low power upconversion using MLCT sensitizers

Radiy R. Islangulov, Denis V. Kozlov and Felix N. Castellano\*

Selective low energy excitation of the metal-to-ligand charge transfer (MLCT) transition in  $[\text{Ru}(\text{dmb})_3]^{2+}$  (dmb = 4,4'-dimethyl-2,2'-bipyridine) in the presence of anthracene or 9,10-diphenylanthracene yields easily visualized green-to-blue upconverted singlet fluorescence resulting from triplet-triplet annihilation at low excitation power.

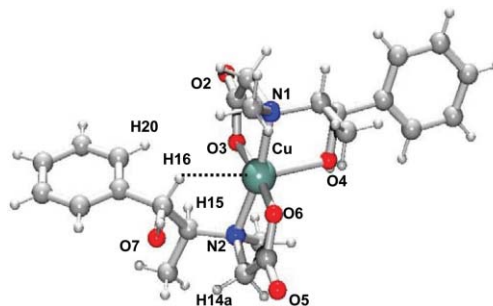


3779

### On the $\text{CH}\cdots\text{Cu}$ agostic interaction: chiral copper(II) compounds with ephedrine and pseudoephedrine derivatives

Miguel Castro,\* Julián Cruz, Horacio López-Sandoval and Norah Barba-Behrens\*

The structure of  $[\text{Cu}(\text{Hceph})_2]$  has a  $\text{Cu}(\text{II})\cdots\text{H}$  agostic bond. This bond was characterized by the atoms in molecules formalism.

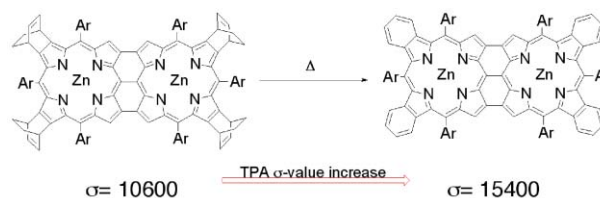


3782

### Enlarged $\pi$ -electronic network of a *meso-meso*, $\beta$ - $\beta$ , $\beta$ - $\beta$ triply linked dibenzoporphyrin dimer that exhibits a large two-photon absorption cross section

Yasuhide Inokuma, Noboru Ono, Hidemitsu Uno, Deok Yun Kim, Soo Bum Noh, Dongho Kim\* and Atsuhiko Osuka\*

A *meso-meso*,  $\beta$ - $\beta$ ,  $\beta$ - $\beta$  triply linked dibenzoporphyrin dimer that exhibits a large two-photon absorption (TPA) cross section was prepared in two different ways.

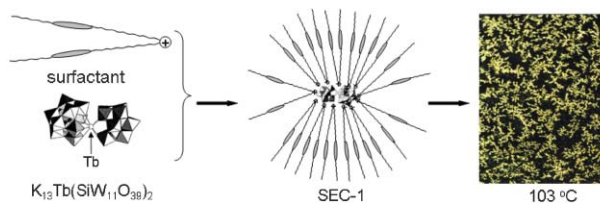


3785

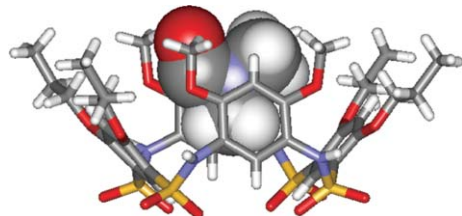
### A surfactant-encapsulated polyoxometalate complex towards a thermotropic liquid crystal

Wen Li, Weifeng Bu, Haolong Li, Lixin Wu\* and Min Li

A novel surfactant-encapsulated terbium-substituted heteropolyoxotungstate complex  $[\text{L}1]_{13}[\text{Tb}(\text{SiW}_{11}\text{O}_{39})_2] \cdot 30\text{H}_2\text{O}$  (SEC-1) bearing mesomorphous groups was successfully prepared by the ionic self-assembling route, exhibiting characteristic thermotropic liquid-crystalline behavior.



3788



### Macrocyclic aromatic tetrasulfonamides with a stable cone conformation

Lan He,\* Yu An, Lihua Yuan, Kazuhiro Yamato, Wen Feng, Oksana Gerlitz, Chong Zheng and Bing Gong\*

Aromatic tetrasulfonamide macrocycles carrying alkoxy side chains adopt a stable cone conformation in both the solid state and solution.

3791

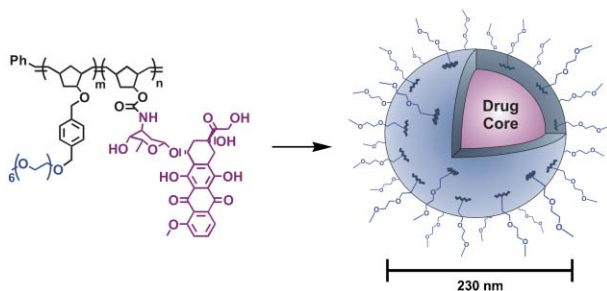


### A previously unrecognized hydronium di-cation in the crystal structure of a cucurbituril derivative

Ivan Bernal,\* Uday Mukhopadhyay, Alexander V. Virovets, Vladimir P. Fedin and William Clegg

The novel di-hydronium di-cation  $(\text{H}_{14}\text{O}_6)^{2+}$ , or  $[(\text{H}_3\text{O})_2(\text{H}_2\text{O})_4]^{2+}$ , is found in the crystal structure of a complex containing the cavitand cucurbit[6]uril; the formation of the cation cluster, with its almost planar  $\text{O}_6\text{H}_6$  ring, is templated by hydrogen bonding to the  $\text{O}_6$  portal of the cavitand.

3793

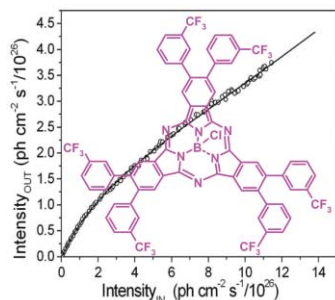


### High-density doxorubicin-conjugated polymeric nanoparticles *via* ring-opening metathesis polymerization

Paul A. Bertin, DeeDee Smith and SonBinh T. Nguyen\*

High-density doxorubicin-conjugated polymeric nanoparticles are prepared *via* ring-opening metathesis polymerization and sustained release of nearly 50% of the anticancer agent is observed after 24 h in mildly acidic aqueous solution.

3796



### Nonlinear optical effects related to saturable and reverse saturable absorption by subphthalocyanines at 532 nm

Danilo Dini,\* Sergej Vagin, Michael Hanack, Vincenzo Amendola and Moreno Meneghetti

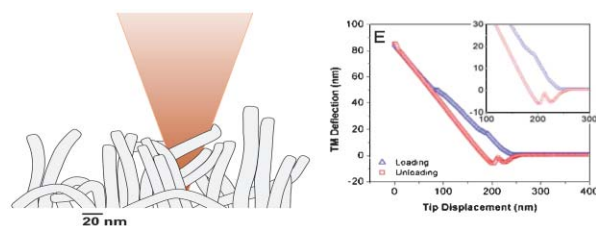
It is found that both effects of saturable absorption and reverse saturable absorption are obtained with a solution of subphthalocyanine **2** at 532 nm depending on the intensity of 9 ns laser pulses.

3799

### Synthetic gecko foot-hairs from multiwalled carbon nanotubes

Betul Yurdumakan, Nachiket R. Raravikar, Pulickel M. Ajayan and Ali Dhinojwala\*

We report a fabrication process for constructing polymer surfaces with multiwalled carbon nanotube hairs, with strong nanometer-level adhesion forces that are 200 times higher than those observed for gecko foot-hairs. This process can be adapted to create structures that are found in nature on the gecko's foot and offer excellent potential for applications as dry adhesives for space, microelectronics and MEMS devices.

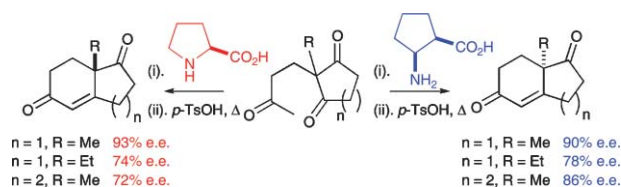


3802

### Highly enantioselective organocatalysis of the Hajos–Parrish–Eder–Sauer–Wiechert reaction by the $\beta$ -amino acid cispentacin

Stephen G. Davies,\* Ruth L. Sheppard, Andrew D. Smith\* and James E. Thomson

The  $\beta$ -amino acid cispentacin promotes the Hajos–Parrish–Eder–Sauer–Wiechert reaction with levels of enantioselectivity comparable to or higher than proline.

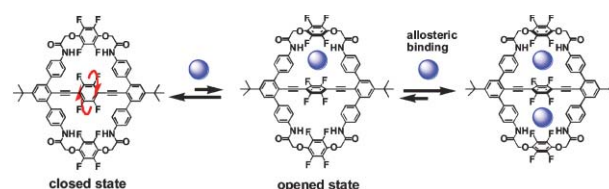


3805

### Allosteric binding of anionic guests to a bicyclic host which imitates the action of a 'turnstile'

Osamu Hirata, Masayuki Takeuchi\* and Seiji Shinkai\*

A bicyclic host which has a diethynyl tetrafluorophenyl axis and is expected to behave as an anion-binding 'turnstile' has been designed.

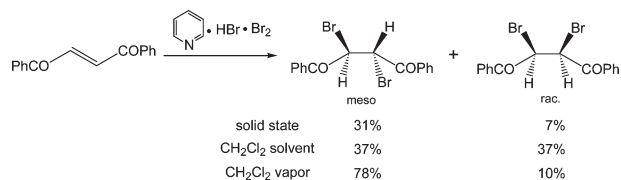


3808

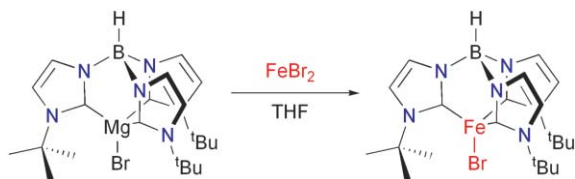
### The important role of solvent vapor in an organic solid state reaction

Seiken Nakamatsu, Shinji Toyota, William Jones and Fumio Toda\*

Some organic reactions in the solid state proceeded very efficiently and selectively in the presence of a small amount of solvent vapor.



3811

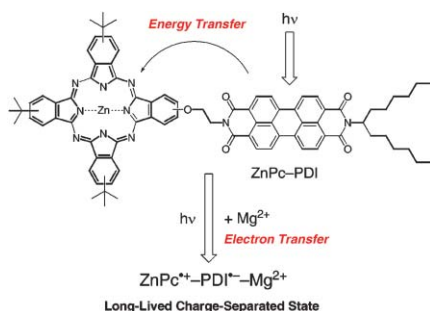


**A new synthetic route to bulky “second generation” tris(imidazol-2-ylidene)borate ligands: synthesis of a four coordinate iron(II) complex**

Ismael Nieto, Francisco Cervantes-Lee and Jeremy M. Smith\*

A new synthetic route provides access to coordinatively unsaturated metal complexes of bulky tris(carbene)borate ligands.

3814

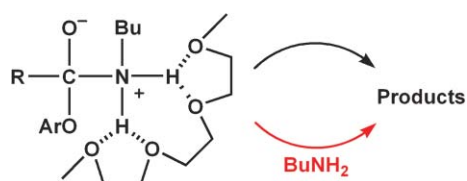


**Formation of a long-lived charge-separated state of a zinc phthalocyanine-perylene diimide dyad by complexation with magnesium ion**

Shunichi Fukuzumi,\* Kei Ohkubo, Javier Ortiz, Ana M. Gutiérrez, Fernando Fernández-Lázaro\* and Ángela Sastre-Santos\*

Photoexcitation of a zinc phthalocyanine-perylene diimide (ZnPc-PDI) dyad affords the triplet excited state, whereas addition of Mg<sup>2+</sup> to the photoexcited ZnPc-PDI results in formation of a long-lived charge-separated state.

3817

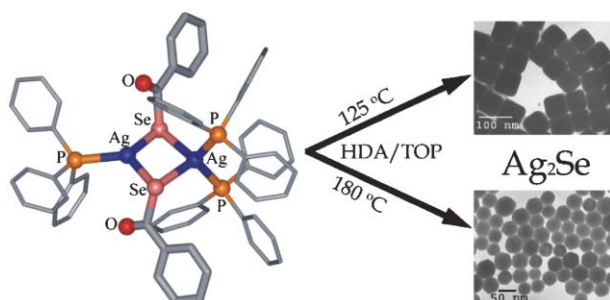


**Novel catalytic effects in ester aminolysis in chlorobenzene**

Nuno Basilio, Luís García-Río,\* J. Ramón Leis, Juan C. Mejuto and Moisés Pérez-Lorenzo

A new pathway should be included in the reaction scheme for ester aminolysis catalyzed by glymes.

3820



**Shape and size control of Ag<sub>2</sub>Se nanocrystals from a single precursor [(Ph<sub>3</sub>P)<sub>3</sub>Ag<sub>2</sub>(SeC(O)Ph)<sub>2</sub>]**

Meng Tack Ng, Chris Boothroyd and Jagadeesha J. Vittal\*

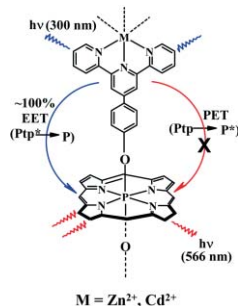
Monodispersed Ag<sub>2</sub>Se nanocubes and faceted crystals have been synthesized by using one-pot hexadecylamine (HDA)-controlled decomposition of [(PPh<sub>3</sub>)<sub>3</sub>Ag<sub>2</sub>(SeC(O)Ph)<sub>2</sub>]. The morphology of the nanocrystals induces self-assembly of these nanoparticles, which is a property required for photonic studies.

3823

### Axial bis(terpyridoxy)phosphorus(v) porphyrin: Modulation of PET and EET by Zn<sup>2+</sup> or Cd<sup>2+</sup> ions

P. Prashanth Kumar,\* G. Premaladha and Bhaskar G. Maiya

Axial bis(terpyridoxy)phosphorus(v) porphyrin was prepared and its photophysical properties were investigated. Excitation at 566 nm, with addition of Zn<sup>2+</sup>/Cd<sup>2+</sup>, inhibited PET from terpyridine to excited porphyrin, whereas at 300 nm EET dominated over PET from excited terpyridine to the porphyrin.

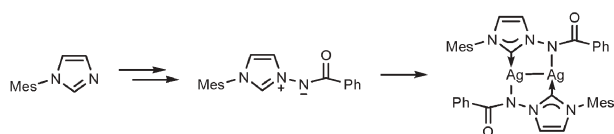


3826

### Structure and reactivity of a new anionic *N*-heterocyclic carbene silver(I) complex

Claude Y. Legault, Christopher Kendall and André B. Charette\*

The efficient synthesis of a *N*-benzoyliminoimidazolium ylide provides access to a new type of *N*-heterocyclic anionic carbene, from which air stable Ag(I) and Cu(II) complexes and a catalytically active Rh(I) complex were formed.

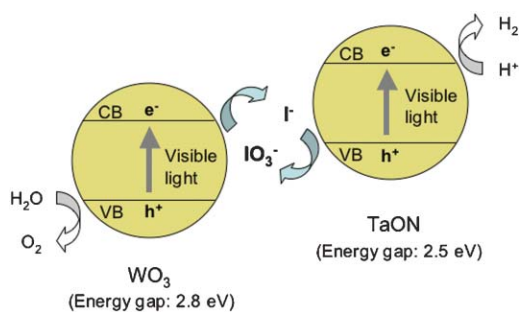


3829

### Photocatalytic overall water splitting under visible light by TaON and WO<sub>3</sub> with an IO<sub>3</sub><sup>-</sup>/I<sup>-</sup> shuttle redox mediator

Ryu Abe,\* Tsuyoshi Takata, Hideki Sugihara and Kazunari Domen

The oxynitride TaON was applied for the first time to the two-step overall splitting of water under visible light through combination with WO<sub>3</sub> using an IO<sub>3</sub><sup>-</sup>/I<sup>-</sup> shuttle redox mediator.

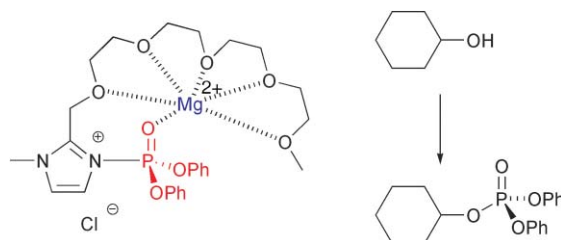


3832

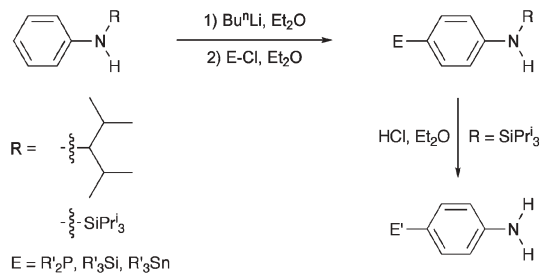
### Catalytic phosphorylation using a bifunctional imidazole derived nucleophilic catalyst

Simon Jones,\* Julian Northen and Alan Rolfe

Polyether/imidazole hybrid catalysts have been prepared and shown to function as bifunctional catalysts in the presence of group 1 and 2 cations for the phosphorylation of alcohols using phosphoryl chlorides.



3835

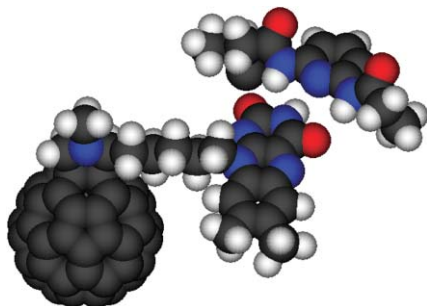


### Sterically-controlled regioselective *para*-substitutions of aniline

Philip W. Dyer,\* John Fawcett, Gerald A. Griffith, Martin J. Hanton, Céline Olivier, Adam R. Patterson and Samuel Suhard

Introduction of bulky 1-isopropyl-2-methylpropyl or triisopropylsilyl substituents at the nitrogen of aniline promotes regioselective *para*-functionalisation by soft electrophiles following a lithiation/substitution sequence.

3838

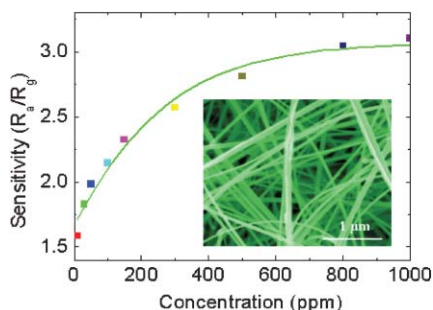


### The electrochemically-tuneable interactions between flavin-functionalised C<sub>60</sub> derivatives and 2,6-diethylamidopyridine

Joseph B. Carroll, Graeme Cooke,\* James F. Garey, Brian J. Jordan, Suhil Mabruk and Vincent M. Rotello

We report the electrochemically-tuneable interactions between flavin-functionalised C<sub>60</sub> derivatives and a diamidopyridine derivative.

3841

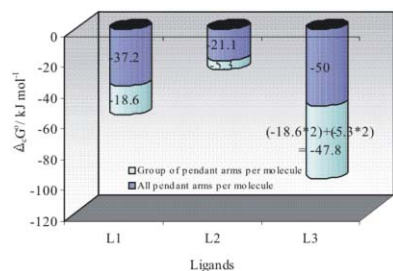


### Single-crystalline Sb-doped SnO<sub>2</sub> nanowires: synthesis and gas sensor application

Q. Wan\* and T. H. Wang

The synthesis of semiconducting transparent Sb-doped SnO<sub>2</sub> nanowires in mass production by an *in situ* doping approach is reported, and the ethanol sensing results demonstrated that Sb-doped SnO<sub>2</sub> nanowires have a promising application for the fabrication of gas sensors with low resistance, and quick response and recovery times.

3844



### A preliminary observation of additive thermodynamic contribution of pendant arms to the complexation of calixarene derivatives with mercury(II)

Angela F. Danil de Namor,\* Samir Chahine, Eduardo E. Castellano, Oscar E. Piro and H. Donald Brooke Jenkins

The first demonstration of an additive thermodynamic contribution of pendant arms in calixarene–mercury(II) complexation.

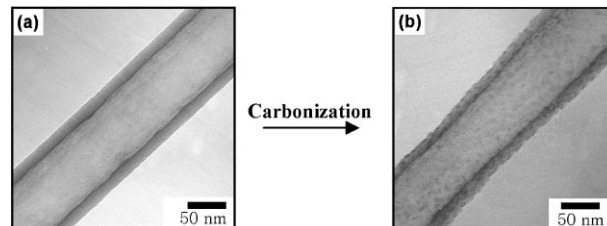


3847

**Fabrication of polyimide nanotubes and carbon nanotubes containing magnetic iron oxide in confinement**

Jyongsik Jang,\* Kyung Jin Lee and Younggeun Kim

Polyimide nanotubes and their carbonized product with tunable wall thickness were fabricated by a precursor impregnation method and subsequent carbonization process using an AAO template. Magnetic properties could also be introduced into carbon nanotubes by carbonizing the Fe-embedded polyimide nanotube precursor.

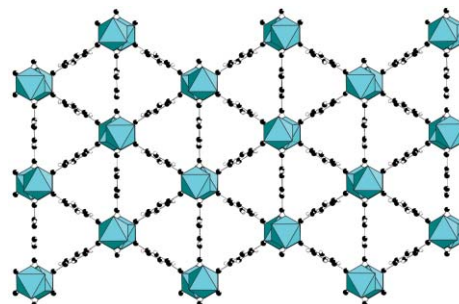


3850

**A microporous scandium terephthalate,  $\text{Sc}_2(\text{O}_2\text{CC}_6\text{H}_4\text{CO}_2)_3$ , with high thermal stability**

S. R. Miller, P. A. Wright,\* C. Serre, T. Loiseau, J. Marrot and G. Férey

The first porous scandium carboxylate,  $\text{Sc}_2(\text{O}_2\text{CC}_6\text{H}_4\text{CO}_2)_3$ , has a framework of isolated  $\text{ScO}_6$  octahedra and fully connected terephthalate ligands that has high thermal stability and a pore volume of  $0.26 \text{ cm}^3 \text{ g}^{-1}$ .

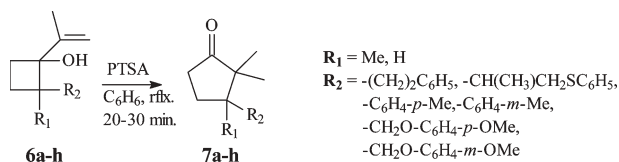


3853

**2,2-Dimethyl cyclopentanones by acid catalyzed ring expansion of isopropenylcyclobutanols. A short synthesis of ( $\pm$ )- $\alpha$ -cuparenone and ( $\pm$ )-herbertene**

Angela M. Bernard, Angelo Frongia, Francesco Secci and Pier P. Piras\*

New access to 2,2-dimethyl cyclopentanones by acid catalyzed ring expansion of isopropenylcyclobutanols. The method allows a straightforward synthesis of ( $\pm$ )- $\alpha$ -cuparenone and ( $\pm$ )-herbertene.

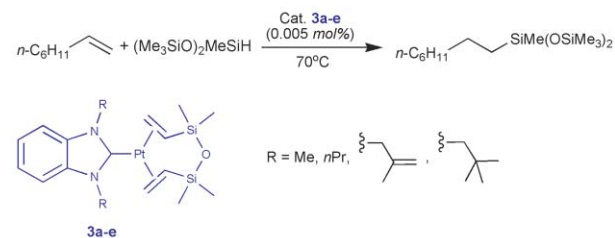


3856

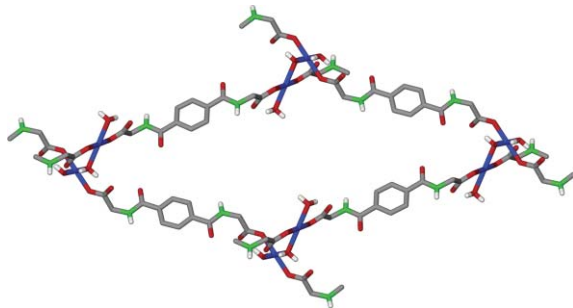
**Second generation *N*-heterocyclic carbene–Pt(0) complexes as efficient catalysts for the hydrosilylation of alkenes**

Olivier Buisine, Guillaume Berthon-Gelloz, Jean-François Brière, Sébastien Stérin, Gérard Mignani, Paul Branlard, Bernard Tinant, Jean-Paul Declercq and István E. Markó\*

A new class of benzimidazolylidene carbene–Pt(0) complexes was developed and used to efficiently catalyse the hydrosilylation of alkenes.



3859

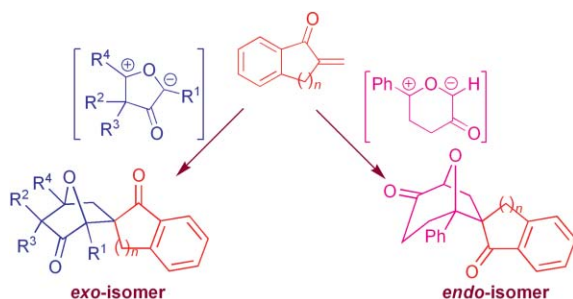


### Interpenetrated networks from a novel nanometer-sized pseudopeptidic ligand, bridging water, and transition metal ions with cds topology

George E. Kostakis, Luigi Casella, Nick Hadjiliadis,\*  
Enrico Monzani, Nikolaos Kourkoumelis and  
John C. Plakatouras\*

A new approach has been initiated combining coordination chemistry and biomimetic ligands to synthesize metal organic polymers. TBG<sup>2-</sup> coordinates to metal ions to form 3D polymers with cds structures and reversible loss of water molecules.

3862

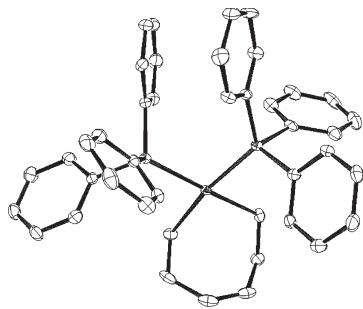


### Highly regio-, chemo- and diastereoselective synthesis of oxa-bridged spirocycles: A novel observation of reverse selectivity

Sengodagounder Muthusamy,\*  
Janagiraman Krishnamurthi and Munirathnam Nethaji

The reverse regio- and diastereoselectivities are observed between the reactions involving 5- and 6-membered-ring cyclic carbonyl ylide dipoles with  $\alpha$ -methylene ketones. A mild catalytic route to synthesize spirocyclic systems with high regio-, chemo- and diastereoselectivities is described.

3865

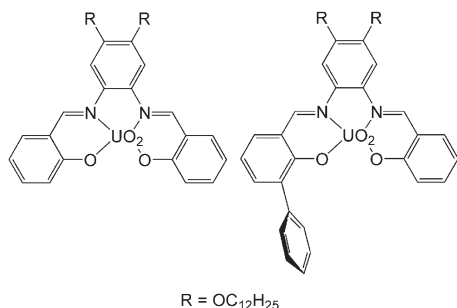


### A new route to metallacycloalkanes

Katja Dralle, Nastassia L. Jaffa, Tanya le Roex,  
John R. Moss,\* Susan Travis, Nicholas D. Watermeyer  
and Akella Sivaramakrishna

The platinumacycloheptane Pt(PPh<sub>3</sub>)<sub>2</sub>(CH<sub>2</sub>)<sub>6</sub> has been obtained in high yield from the hydrogenation of the platinumacycloheptene Pt(PPh<sub>3</sub>)<sub>2</sub>(CH<sub>2</sub>CH<sub>2</sub>CH=CHCH<sub>2</sub>CH<sub>2</sub>).

3867



### Exclusive transition state stabilization in the supramolecular catalysis of Diels–Alder reaction by a uranyl salophen complex

Antonella Dalla Cort, Luigi Mandolini\* and  
Luca Schiaffino

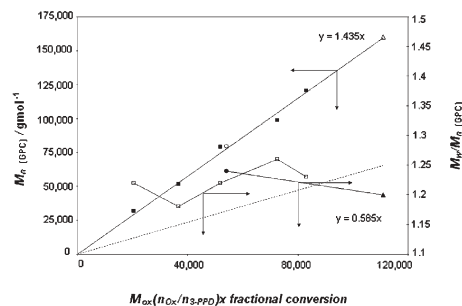
Whereas the parent uranyl salophen is catalytically inactive, its phenyl derivative effectively catalyses with turnover the reaction of benzoquinone with 1,3-cyclohexadiene, while showing no appreciable affinity toward reactants and product.

3870

**Non-steady-state living polymerization: a new route to control cationic ring-opening polymerization (CROP) of oxetane via an activation chain end (ACE) mechanism at ambient temperature**

Hassen Bouchékif,\* Marcia I. Philbin, Eamon Colclough and Allan J. Amass\*

Well-defined polyoxetane with low polydispersity has been synthesized via a novel living polymerisation process using 3-phenoxypropyl 1,4-dioxanium hexafluoroantimonate (3-PPD) as a model of a living “monomeric polyoxetane” initiator, in 1,4-dioxane at 35 °C.



## ADDITION AND CORRECTION

3873

**Non-steady-state living polymerization: a new route to control cationic ring-opening polymerization (CROP) of oxetane via an activation chain end (ACE) mechanism at ambient temperature**

Hassen Bouchékif, Marcia I. Philbin, Eamon Colclough and Allan J. Amass

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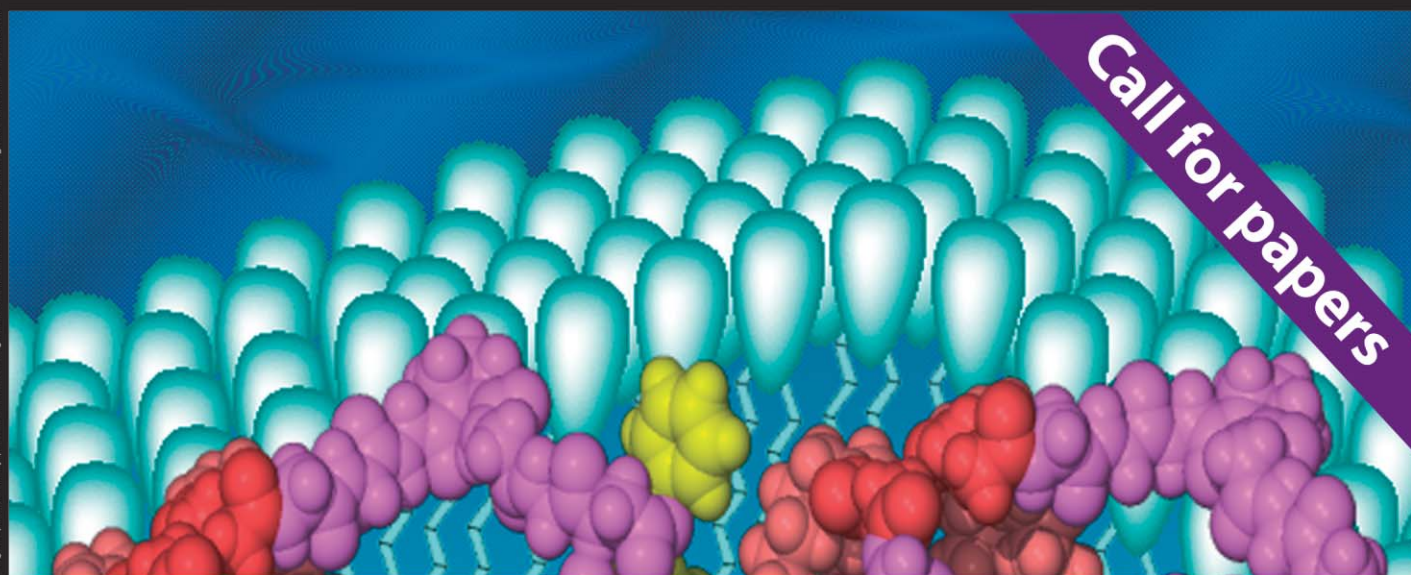
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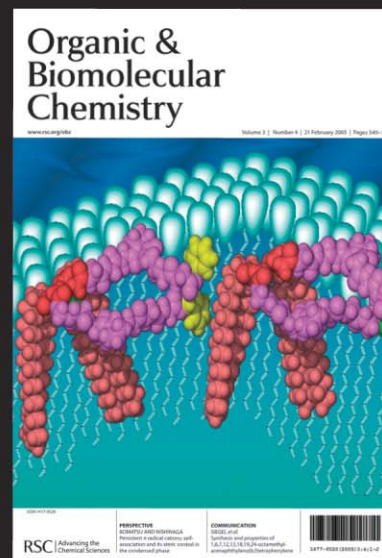


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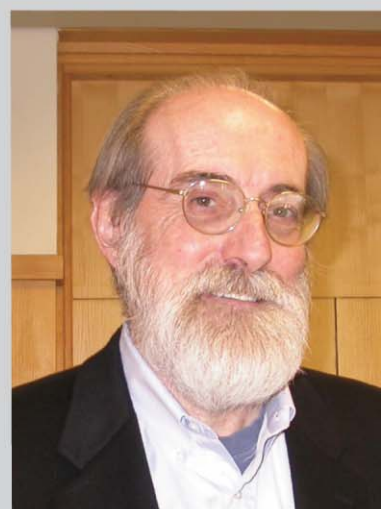
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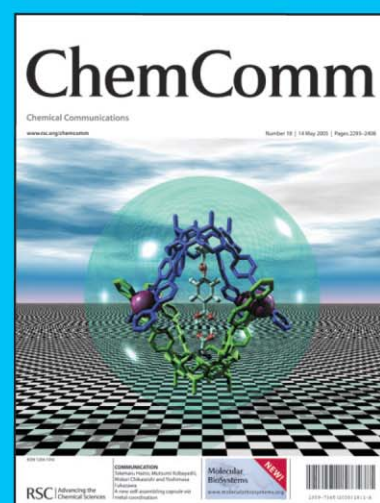
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