**Cover (far left)**

A Fourier-Transform Ion-Cyclotron Resonance (FTICR) mass spectrometer used in studying the mechanisms operative in the activation of C–F bonds on surfaces and in the gas phase (pp. 1321-1326).

Inside cover (left)

Upon self-assembly of an enantiomerically pure organic tecton and an achiral metallic tecton, an enantiomerically pure triple stranded helical molecular network is formed (pp. 1336-1337).

contents

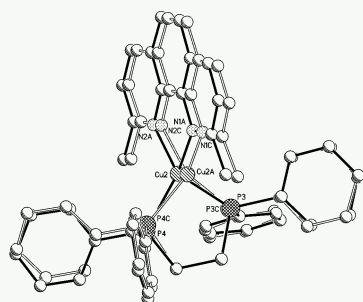
FOCUS ARTICLE

1317

What can time-resolved diffraction tell us about transient species?: excited-state structure determination at atomic resolution

Philip Coppens

'Photocrystallography' is being used to study highly reactive excited molecules that exist for just millionths or even billionths of a second using very intense light sources.

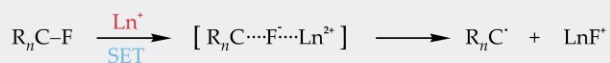


FEATURE ARTICLE

1321

Carbon–fluorine bond activation—looking at and learning from unsolvated systems

Ulf Mazurek* and Helmut Schwarz*



The activation of carbon–fluorine bonds on surfaces and in several gas-phase reactions of transition metals with organic substrates is discussed with particular attention to mechanistic aspects.



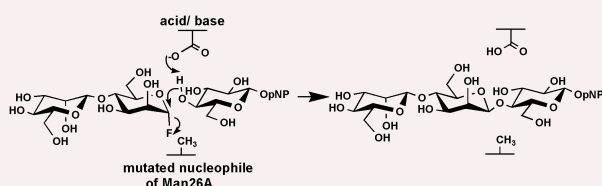
COMMUNICATIONS

1327

Expansion of the glycosynthase repertoire to produce defined manno-oligosaccharides

Michael Jahn, Dominik Stoll, R. Antony J. Warren, Lóránd Szabó, Pritpal Singh, Harry J. Gilbert, Valérie M.-A. Ducros, Gideon J. Davies and Stephen G. Withers*

Mutant endo-mannanases, in which the catalytic nucleophile has been replaced, function as glycosynthases in the synthesis of manno-oligosaccharides of defined lengths.



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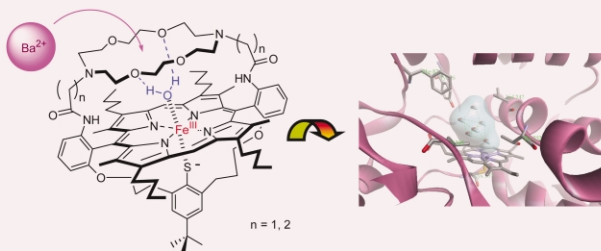
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1330

The origin of the low-spin character of the resting state of cytochrome P450_{cam} investigated by means of active site analogues

Martin Lochner, Markus Meuwly and Wolf-D. Woggon*

Novel crown-capped iron(S⁻) porphyrins have been prepared (left). cw-EPR spectra of these supramolecular complexes indicate that the resting state of P450_{cam} is low-spin due to a distinctive δ⁻ character of the water oxygen coordinating to iron, *i.e.* results suggest a polarization of the water cluster in the protein active site.

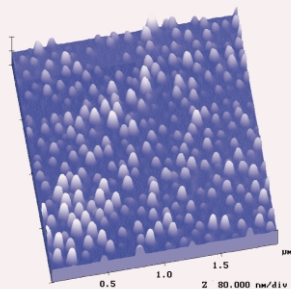


1333

Nanostructured silicon surfaces *via* nanoporous alumina

Matthias Kruse, Steffen Franzka and Günter Schmid*

Nanoporous alumina membranes are used to nanostructure silicon surfaces. The process proceeds *via* imprinting of a PMMA film on silicon, followed by RIE transferring the PMMA structure into the silicon.

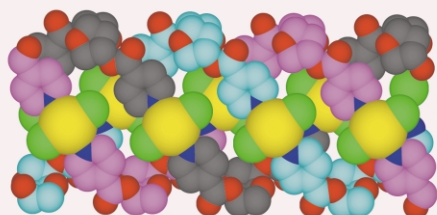


1336

Molecular tectonics: from enantiomerically pure sugars to enantiomerically pure triple stranded helical coordination network

Philippe Grosshans, Abdelaziz Jouaiti, Véronique Bulach, Jean-Marc Planeix, Mir Wais Hosseini* and Jean-François Nicoud

Self-assembly of enantiomerically pure organic tectons and metallic centres leads to the formation of enantiomerically pure infinite triple stranded helices in the crystalline phase.

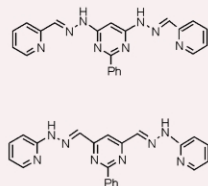
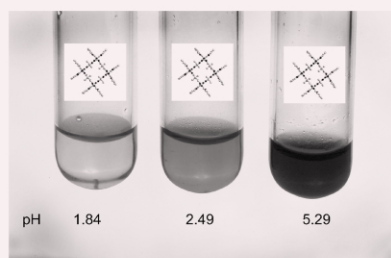


1338

Synthesis of ionisable [2 × 2] grid-type metallo-arrays and reversible protonic modulation of the optical properties of the [Co^{II}₄L₄]⁸⁺ species

Mario Ruben, Jean-Marie Lehn* and Gavin Vaughan

The optical properties of [Co^{II}₄L₄]⁸⁺ [2 × 2] grid complexes, incorporating new bis-hydrazone ligands, can be modulated by multiple protonation/deprotonation, giving reversible colour changes.

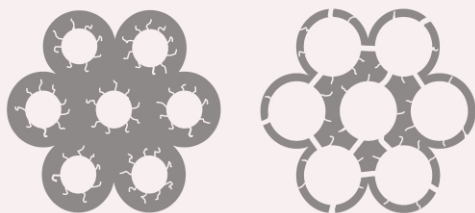


1340

Facile synthesis of high quality mesoporous SBA-15 with enhanced control of the porous network connectivity and wall thickness

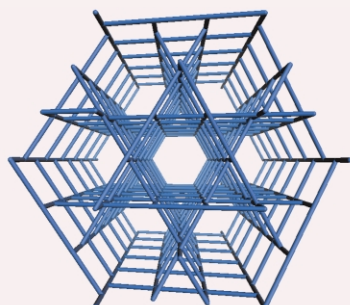
Minkee Choi, Wonjoon Heo, Freddy Kleitz and Ryong Ryoo*

A simple synthetic approach is described allowing a highly reproducible control of the network connectivity and wall thickness of SBA-15, by adjusting the SiO₂ : P123 ratio, with low HCl concentrations. The new synthesis conditions are suitable for the large-scale production of high-quality SBA-15.



Mesoporous SBA-15 silica

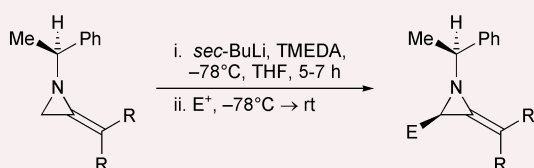
1342

**A new 6^{5.8} topology and a distorted 6^{5.8} CdSO₄ topology: two new supramolecular isomers of [M₂(bdc)₂(L)₂]_n coordination polymers**

Brian Moulton, Heba Abourahma, Michael W. Bradner, Jianjiang Lu, Gregory J. McManus and Michael J. Zaworotko*

The structures of two supramolecular isomers of [M₂(bdc)₂]_n coordination polymers are described: one exhibits an unprecedented trigonal 4-connected topology (shown), and the other exhibits the classical CdSO₄-topology.

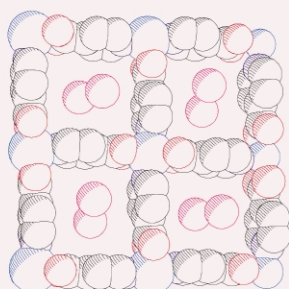
1344

**Aziridinyli anions from a chiral, nonracemic 2-isopropylideneaziridine: surprisingly diastereoselective alkylation reactions**

J. F. Hayes, N. Prévost, I. Prokeš, M. Shipman,* A. M. Z. Slawin and H. Twin

Lithiation and alkylation of a 2-methyleneaziridine (R = H) proceeds with poor levels of stereocontrol (E⁺ = BnBr, 14% de). In stark contrast, identical reactions of the corresponding 2-isopropylideneaziridine (R = Me) proceed in a highly diastereoselective manner (80–90% de).

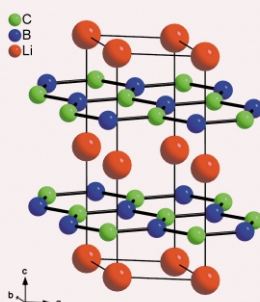
1346

**A unique eclipsed 2-D coordination polymer with removable iodine molecules in the open-channel structure**

Jack Y. Lu* and Amy M. Babb

[Cu(IN)₂]_nI₂, the first removable iodine-containing open-framework polymer with eclipsed 2-D structure, has been synthesized and characterized. The open channel eclipsed 2-D structure is stable up to 300 °C.

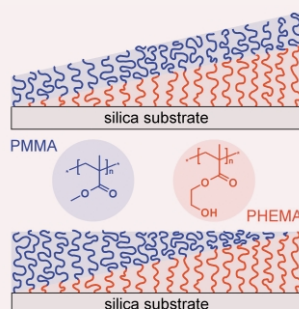
1348

**Synthesis and characterisation of Li_xBC—hole doping does not induce superconductivity**

A. M. Fogg, J. B. Claridge, G. R. Darling and M. J. Rosseinsky*

New Li_xBC phases are synthesised by high-temperature deintercalation from layered LiBC and are not superconducting despite electronic structures very similar to that of the 40K T_c MgB₂.

1350

**Formation of surface-grafted copolymer brushes with continuous composition gradients**

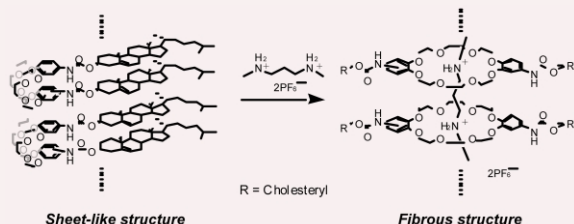
Michael R. Tomlinson and Jan Genzer*

A simple technique for generating surface-tethered block copolymer assemblies whose composition varies gradually along a flat solid substrate.

1352

Novel host–guest organogels as stabilized by the formation of crown–ammonium pseudo-rotaxane complexes

Shin-ichiro Kawano, Norifumi Fujita and Seiji Shinkai*

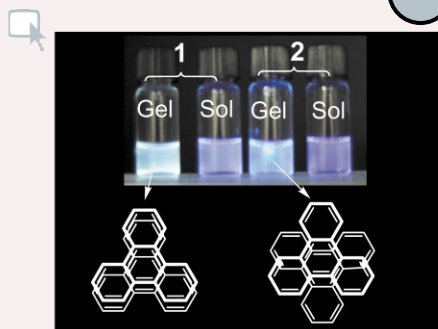


The conformational change of a dibenzo-24-crown-8 bearing two cholesteryl groups (**1**) was triggered by the specific diammonium guest, which leads to the phase transition from the sol to the gel.

1354

Unusual emission properties of a triphenylene-based organogel system

Masato Ikeda, Masayuki Takeuchi and Seiji Shinkai*



We have found that triphenylene derivatives **1** and **2** form supramolecular organogels in appropriate organic solvents and exhibit unusual photochemical properties arising from the excimer formation in the gel phase.

1356

Statistical radical copolymerization of styrene and methyl methacrylate in a room temperature ionic liquid

Hongwei Zhang, Kunlun Hong, Michael Jablonsky and Jimmy W. Mays*

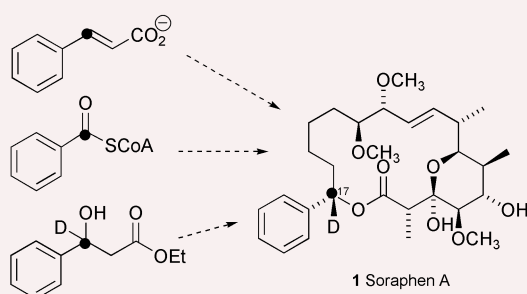


The first study on statistical copolymerization in a room temperature ionic liquid is reported. Reactivity ratios obtained are significantly different from those in conventional organic solvents or in bulk.

1358

Investigation of the early stages in soraphen A biosynthesis

Alison M. Hill,* Betty L. Thompson, Jonathan P. Harris and Roger Segret

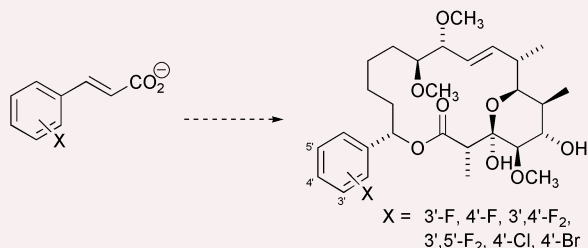


The unusual benzoate starter unit in soraphen A derives from phenylalanine *via* cinnamate in a β -oxidative pathway; 3-phenyl-3-hydroxypropanoate incorporates directly into soraphen by loading onto module 2 of the PKS.

1360

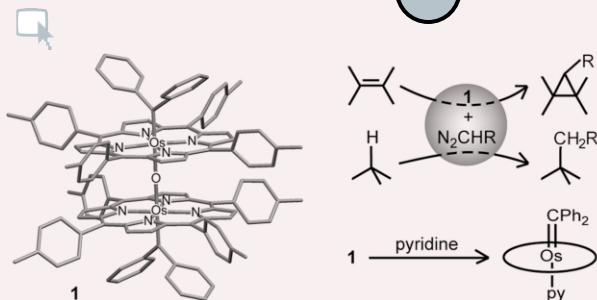
Novel soraphens from precursor directed biosynthesis

Alison M. Hill* and Betty L. Thompson



Six novel halogenated soraphen analogues have been produced using precursor directed biosynthesis; cinnamate was used to deliver the starter unit but *ortho* substituents were not tolerated by the soraphen PKS.

1362

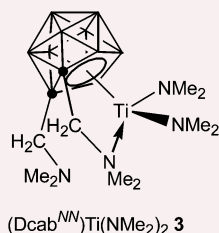


Oxo-bridged metal carbene complexes. Synthesis, structure and reactivities of $\{[\text{Os}(\text{Por})(\text{CPh}_2)]_2\text{O}\}$ (Por = porphyrinato dianion)

Yan Li, Jie-Sheng Huang, Zhong-Yuan Zhou and Chi-Ming Che*

The first intermolecular carbene insertion into C–H bonds catalysed by a metalloporphyrin.

1364

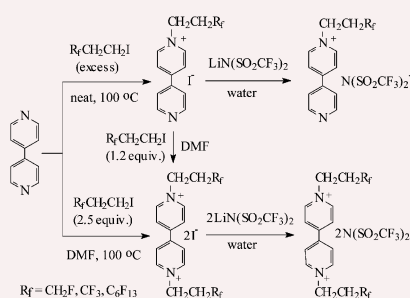


Novel titanium complexes of a multidentate dicarbollide ligand. Synthesis and structural characterization of a constrained geometry complex

Young-Joo Lee, Jong-Dae Lee, Jaejung Ko,* Sang-Hern Kim and Sang Ook Kang*

Treatment of Ti(NMe₂)₄ with the hetero-bifunctional ligand *nido*-7,8-(NMe₂CH₂)₂-7,8-C₂B₉H₁₁ (**2**) in toluene gave $\{\eta^5:\eta^1\text{-(NMe}_2\text{CH}_2)_2\text{C}_2\text{B}_9\text{H}_9\text{CH}_2\text{NMe}_2\}\text{Ti}(\text{NMe}_2)_2$ (**3**), which represents the first structurally characterized example of a “CGC-type” titanium complex incorporating the bis(dimethylamino)dicarbollyl ligand.

1366



Syntheses of the first *N*-mono- and *N,N'*-dipolyfluoroalkyl-4,4'-bipyridinium compounds

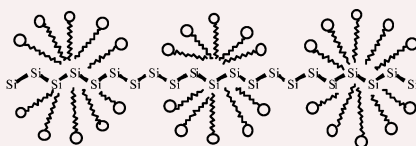
Rajendra P. Singh and Jean'ne M. Shreeve*

The syntheses of the first *N*-mono and *N,N'*-dipolyfluoroalkyl-substituted bipyridinium compounds have been accomplished. Under neat conditions, excess of polyfluoroalkylated halides gave only monoquaternary salts whereas in DMF diquaternary salts are obtained.

1368

Effect of micelle structure on the spectral properties of poly(dimethylsilylene)

Ramachandram Badugu* and Kenkichi Sakamoto

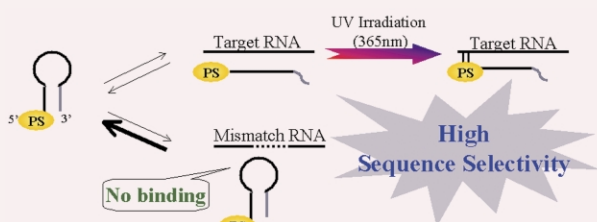


The first observation of longest absorption and fluorescence bands of peralkylpoly(silylene) at RT, resulted from an elongated *transoid* conformer encompassed by three micelles.

1370

Psoralen-conjugated oligonucleotide with hairpin structure as a novel photo-sensitive antisense molecule

Asako Yamayoshi, Reiko Iwase, Tetsuji Yamaoka and Akira Murakami*

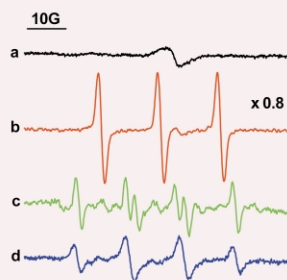


Hairpin type psoralen-conjugated oligonucleotides recognize and cross-link with RNA only when they hybridize with a perfectly complementary RNA.

1372

The photodynamic property improvement of hypocrellin A by chelation with lanthanum ions

Jia-Hong Zhou, Sheng-Qin Xia, Jing-Rong Chen, Xue-Song Wang* and Bao-Wen Zhang*

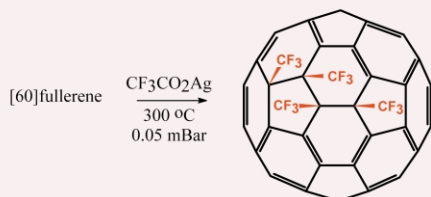


High $^1\text{O}_2$ quantum yield, strong absorption in the phototherapeutic window, and great water solubility make the complex of La^{3+} -HA promising for photodynamic therapy application.

1374

[60]- and [70]Fullerenes are trifluoromethylated across 5:6-bonds

Adam D. Darwish, Anthony G. Avent, Ala'a K. Abdul-Sada and Roger Taylor*

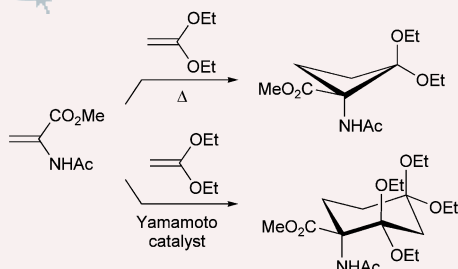


Products from the trifluoromethylation of [60]- and [70]fullerenes indicate that addition occurs across both 6:6- and 5:6-bonds. This runs counter to all previous observations from fullerene chemistry and may necessitate re-evaluation of fullerene addition theories.

1376

Reactivity of 2-acylaminoacrylates with ketene diethyl acetal; [2 + 2] cycloadditions vs. tandem condensations

Alberto Avenoza,* Jesús H. Busto, Noelia Canal and Jesús M. Peregrina*

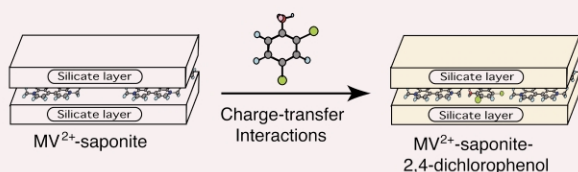


The reactivity of 2-acylaminoacrylates with ketene diethyl acetal can be modulated by means of thermal conditions to yield cyclobutanes for the preparation of c_4Ser , or catalytic conditions that yield cyclohexanes by tandem condensations.

1378

1,1'-Dimethyl-4,4'-bipyridinium-smectites as a novel adsorbent of phenols from water through charge-transfer interactions

Tomohiko Okada and Makoto Ogawa*

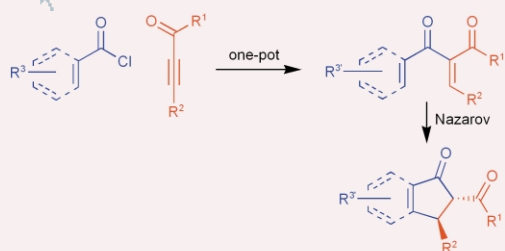


The adsorption of phenols onto 1,1'-dimethyl-4,4'-bipyridinium-smectites from dilute aqueous solution was investigated. The 1,1'-dimethyl-4,4'-bipyridinium-saponite adsorbed 2,4-dichlorophenol effectively through charge-transfer interactions and such interactions resulted in the change in the color of the 1,1'-dimethyl-4,4'-bipyridinium-saponite.

1380

A convenient two step protocol for the synthesis of cyclopentenones and indanones, including an asymmetric variant

Daniel J. Kerr, Christiane Metje and Bernard L. Flynn*



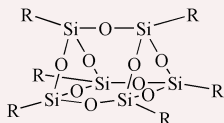
Where R^1 = chiral auxiliary
excellent induction is achieved.

Direct access to highly substituted cyclopentenones and indenones is achieved diastereoselectively in two steps with high levels of chiral induction being observed in the presence of an oxazolidinone auxiliary (R^1).

1382

The preparation of hexasilsesquioxane (T_6) cages by “non aqueous” hydrolysis of trichlorosilanes

Alan R. Bassindale,* Iain A. MacKinnon, Maria G. Maesano and Peter G. Taylor*

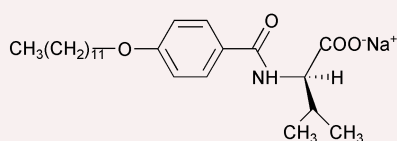


A relatively straightforward procedure is presented for the preparation of novel hexasilsesquioxanes in reasonable yields. Such hexasilsesquioxanes can be used to prepare dendrimers and larger full and partial cages.

1384

A giant vesicle forming single tailed chiral surfactant for enantioseparation by micellar electrokinetic chromatography

Ashok Mohanty and Joykrishna Dey*

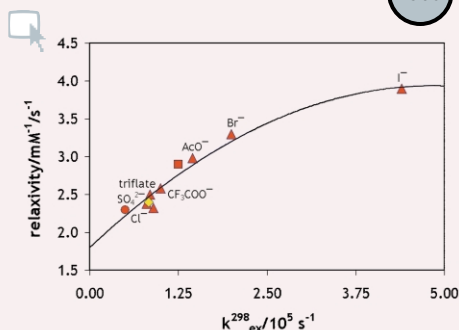


Light microscopy has shown the existence of giant vesicles in aqueous solutions of a novel chiral surfactant, sodium *N*-[4-dodecyloxybenzoyl]-*L*-valinate, which acts as a very good chiral selector for enantioseparation of (\pm)-1,1'-bi-2-naphthol and (\pm)-1,1'-binaphthyl-2,2'-diylhydrogenphosphate by micellar electrokinetic chromatography.

1386

The nature of the counter-anion can determine the rate of water exchange in a metal aqua complex

Alessandro Barge, Mauro Botta,* David Parker* and Horst Puschmann

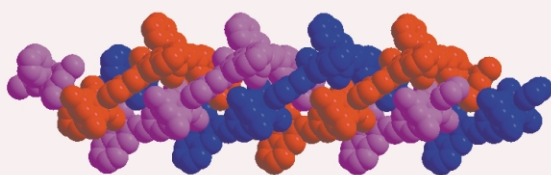


The nature of the counter-anion determines the water exchange rate for a series of cationic gadolinium complexes in aqueous solution, as a consequence of the ordering effect that the anion imposes on the structure of the second hydration sphere.

1388

A homochiral triple helix constructed from an axially chiral bipyridine

Yong Cui, Helen L. Ngo and Wenbin Lin*

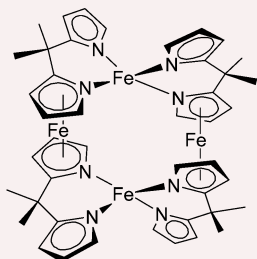


A homochiral triple helix was self-assembled from an axially chiral bipyridine and a linear metal-connecting point, which further assembles into a 2D network *via* infinite $\pi \cdots \pi$ stacking interactions and acts as a host for the inclusion of guest molecules.

1390

The dipyrrolide ligand as a template for the spontaneous formation of a tetranuclear iron(II) complex

Jason B. Love,* Pamela A. Salyer, Andrew S. Bailey, Claire Wilson, Alexander J. Blake, E. Stephen Davies and David J. Evans

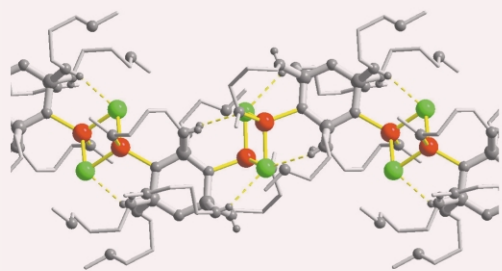


The *meso*-dipyrrolide ligand **L** has been found to promote the aggregation of iron(II) centres, forming a unique tetranuclear complex in which both diazaferrocenyl and distorted tetrahedral iron coordination modes are present.

1392

In situ complexation of lithium chloride by amphiprotic cyclophosphazenes

Philip I. Richards, Mark A. Benson and Alexander Steiner*

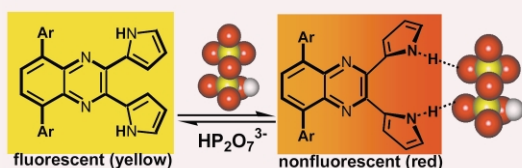


The amphiprotic cyclophosphazene $\{\text{CH}_3\text{O}(\text{CH}_2)_3\text{NH}\}_6\text{P}_3\text{N}_3$ (**1**) incorporates LiCl *via* successive protonation with HCl and deprotonation with Bu^nLi (or *vice versa*) to generate the coordination polymer $\mathbf{1}\cdot 2\text{LiCl}$, a molecular model compound for Li^+ -containing solid polymer electrolytes.

1394

Dipyrrolyl quinoxalines with extended chromophores are efficient fluorimetric sensors for pyrophosphate

Dmitry Aldakov and Pavel Anzenbacher, Jr*

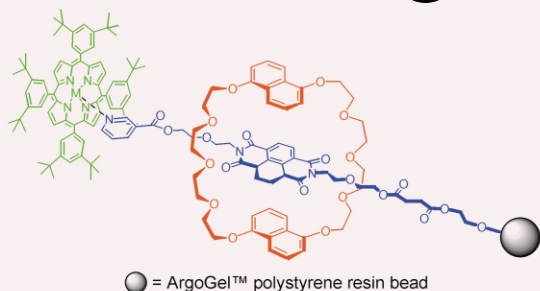


Attachment of aryl substituents to the 5,8-position of the 2,3-di(pyrrole-2-yl)quinoxaline results in a dramatic increase of its fluorescence intensity as well as affinity for inorganic anions. 5,8-Diaryl-DPQ sensors display strong selectivity for pyrophosphate.

1396

A self-assembling polymer-bound rotaxane under thermodynamic control

Ken D. Johnstone, Nick Bampos, Jeremy K. M. Sanders and Maxwell J. Gunter*

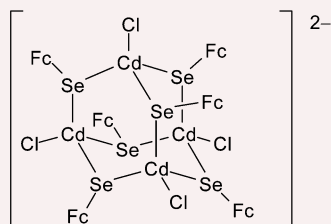


The thermodynamically controlled self-assembly of a neutral donor–acceptor rotaxane, stoppered *via* porphyrin coordination and bound to polystyrene beads is described, and the dynamic equilibrium between solid and solution phases has been examined by HR MAS nmr spectroscopy.

1398

Functionalizing the surface of II–VI clusters: redox active centres on the adamantoid complex $[\text{Cd}_4\text{Cl}_4\{\mu\text{-(SeC}_5\text{H}_4\text{)Fe(C}_5\text{H}_5\text{)}_6\}]^{2-}$

Terry P. Lebold, Donald L. B. Stringle, Mark S. Workentin and John F. Corrigan*

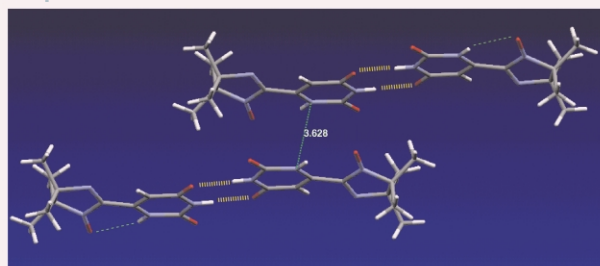


Trimethylsilylselenoferrocene **1** has been prepared in good yield from sodium ferrocenylenolate. The reagent **1** is used as for the synthesis $[\text{Cl}_4\text{Cd}_4\{\mu_2\text{-Se(C}_5\text{H}_4\text{)Fe(C}_5\text{H}_5\text{)}_6\}]^{2-}$ (**2**) (shown), a Cd_4Se_6 adamantoid cluster with six surface ferrocenyl groups.

1400

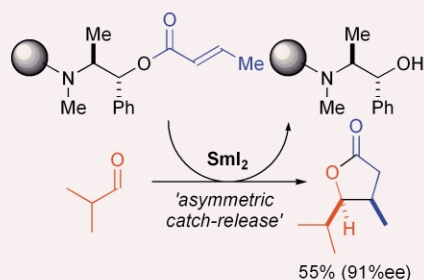
Molecular recognition for stable organic radicals — 2-(6-uradynyl)-4,4,5,5-tetramethyl-4,5-dihydro-1H-imidazole-1-oxyl

Patrick Taylor, Paul R. Serwinski and Paul M. Lahti*



2-(6-Uradynyl)-4,4,5,5-tetramethyl-4,5-dihydro-1H-imidazole-1-oxyl forms hydrogen-bonded dimers in the solid state with exchange spin pairing ($2J/k = -14$ K), apparently due to close contact between imidazole nitrogens on neighbouring molecules.

1402

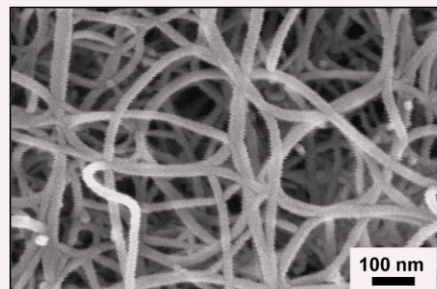


Application of an ephedrine chiral linker in a solid-phase, 'asymmetric catch-release' approach to γ -butyrolactones

Nessan J. Kerrigan, Panee C. Hutchison, Tom D. Heightman and David J. Procter*

A Sm(II)-mediated, asymmetric, intermolecular ketyl-olefin addition employing α,β -unsaturated esters linked to resin through an ephedrine 'chiral link' has been applied in a direct 'asymmetric catch-release' approach to γ -butyrolactones.

1404

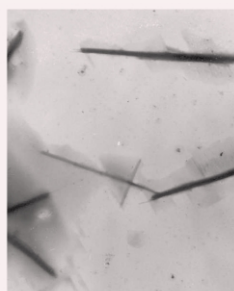


Synthesis and characterization of high-quality double-walled carbon nanotubes by catalytic decomposition of alcohol

S. C. Lyu, T. J. Lee, C. W. Yang and C. J. Lee*

High-quality double-walled carbon nanotubes have been synthesized by catalytic decomposition of alcohol over an Fe–Mo/Al₂O₃ catalyst. The synthesized DWNTs have outer diameters in the range of 1.52–3.54 nm and an average interlayer distance of 0.38 nm between graphene layers.

1406



First crystallographic signature of an acyclic peptide nanorod: molecular mechanism of nanorod formation by a self-assembled tetrapeptide

Debasish Haldar, Arijit Banerjee, Michael G. B. Drew, Apurba Kumar Das and Arindam Banerjee*

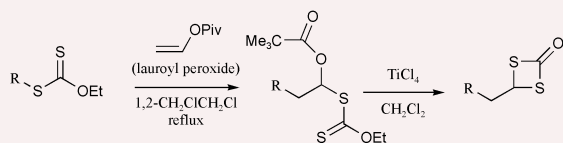
An acyclic tetrapeptide having a double bend conformation forms a supramolecular helix *via* self-association in the crystal and further self-assembles to form polydisperse nanorods of 10–40 nm.

1408

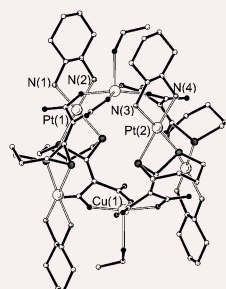
A new, unexpected synthesis of 1,3-dithietanones

Béatrice Quiclet-Sire, Graciela Sanchez-Jimenez and Samir Z. Zard*

Treatment of a geminal pivaloxy xanthate, prepared by an intermolecular radical addition of a xanthate to vinyl pivalate, gives a 1,3-dithietanone, a little known class of compounds.



1410



The non-templated empty cavity and its selective anion binding despite having similar shapes

Kwan Mook Kim,* Ki-Hyun Kim, Tae Yi Kang, Jung Su Park, Rita Song* and Moo-Jin Jun*

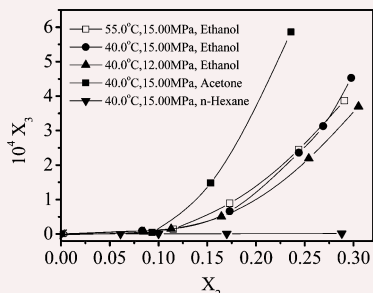
An inorganic tennis ball with an empty cavity was formed without any assistance of guest molecules, and found to bind various anions selectively depending on their size and copper-anion interactions without much change of the shapes.

1412

Solubility of room-temperature ionic liquid in supercritical CO₂ with and without organic compounds

Weize Wu, Jianmin Zhang, Buxing Han,* Jiawei Chen, Zhimin Liu, Tao Jiang, Jun He and Wenjing Li

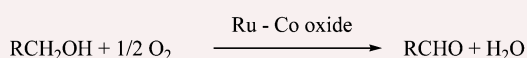
The solubility of 1-butyl-3-methylimidazolium hexafluorophosphate (X₃) in supercritical (sc) CO₂ + polar cosolvent mixtures is considerable and increases dramatically as the mole fraction of the cosolvents (X₂) in scCO₂ exceeds 0.1.



1414

Highly efficient liquid-phase oxidation of primary alcohols to aldehydes with oxygen catalysed by Ru–Co oxide

Mehdi Musawir, Paul N. Davey, Gordon Kelly and Ivan V. Kozhevnikov*



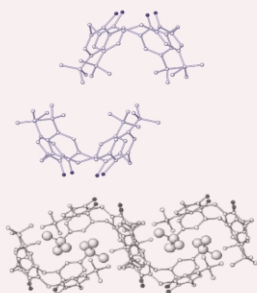
Ru^{IV}–Co^{III} binary oxide is a highly efficient solid catalyst for the oxidation of primary alcohols to aldehydes with O₂ in a liquid phase under atmospheric pressure.

1416

The complex relationship between guest-free polymorphic products and desolvation of *p*-tert-butylcalix[4]arene inclusion compounds

Eric B. Brouwer, Gary D. Enright, Konstantin A. Udachin, Stephen Lang, Kristopher J. Ooms, Peter A. Halchuk and John A. Ripmeester*

Guest-free *p*-tert-butylcalix[4]arene can be obtained from the inclusion compound, yielding either the dense or the open polymorph depending on the conditions of guest removal.

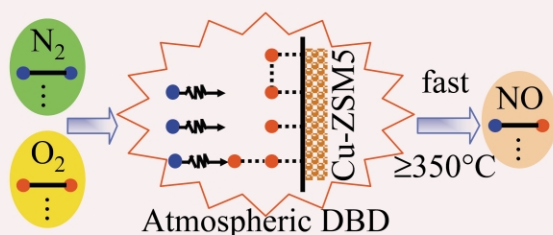


1418

Formation of NO_x from N₂ and O₂ in catalyst-pellet filled dielectric barrier discharges at atmospheric pressure

Qi Sun, Aimin Zhu, Xuefeng Yang,* Jinhai Niu and Yong Xu

Significant amounts of NO_x have been observed in catalyst-pellet filled dielectric barrier discharges (DBDs) of N₂/O₂ at higher temperatures.



1420

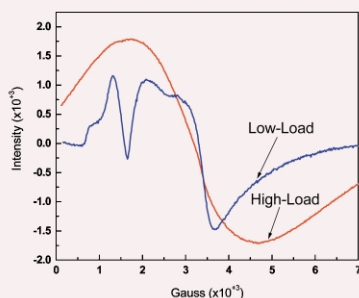
Origin of 1, 3-induction in the addition of alkyl lithium to imines bearing an N-stereogenic center

Nancy, Soma Ghosh, Nishan Singh, Gurmeet Kaur Nanda, P. Venugopalan, Prasad V. Bharatam and Sanjay Trehan*



The formation of the major diastereomer can be explained from the energy minimized structure of the chiral Schiff base bearing an N-stereogenic centre in which the phenyl group has been found to orient in such a manner that it poses lesser steric hindrance to the incoming nucleophile as compared to the alkyl group.

1432

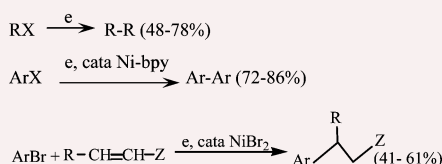


Microwave absorption by nanostructural ferric oxide encapsulated within MCM-41

Haiquan Guo, Wei Xu, Min-Hui Cui, Nan-Loh Yang and Daniel L. Akins*

A new functional material with nonzero microwave absorption ability at zero applied field results from loading MCM-41 to a high percentage by weight with ferric oxide.

1434



Room-temperature ionic liquids as new solvents for organic electrocatalysis. The first examples of direct or nickel-catalysed electroreductive coupling involving organic halides

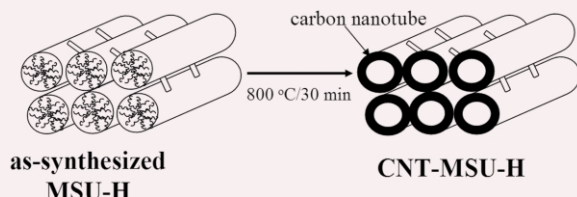
Rachid Barhdadi,* Coralie Courtinard, Jean Yves Nédélec and Michel Troupel

Direct or Ni-mediated electrolytic C–C bond formation by reductive coupling of organic halides using ionic liquids as the solvent–electrolyte media.

1436

Nanocasting of carbon nanotubes: *in-situ* graphitization of a low-cost mesostructured silica templated by non-ionic surfactant micelles

Seong-Su Kim, Dong-Keun Lee, Jainisha Shah and Thomas J. Pinnavaia*



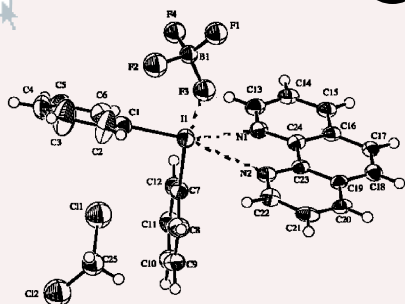
The *in-situ* graphitization of an as-made, large pore silica mesostructure templated by nonionic Pluronic 123 surfactant micelles provides a low cost pathway to the nanocasting of linear carbon nanotubes.

1438

Solid state structures of pentacoordinated λ^3 -iodanes with a trigonal bipyramidal geometry: synthesis of diphenyl- and alkynyl(phenyl)- λ^3 -iodane complexes with 1,10-phenanthroline

Masahito Ochiai,* Takashi Suefuji, Kazunori Miyamoto and Motoo Shiro

We report on a hitherto unknown distorted trigonal bipyramidal geometry around iodine(III), in which 1,10-phenanthroline acts as a bidentate ligand and occupies equatorial sites.

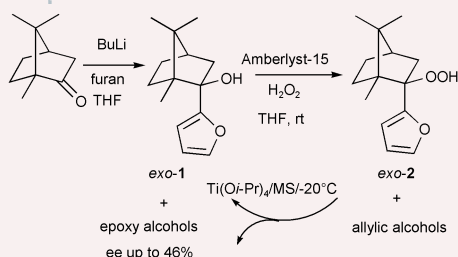


1440

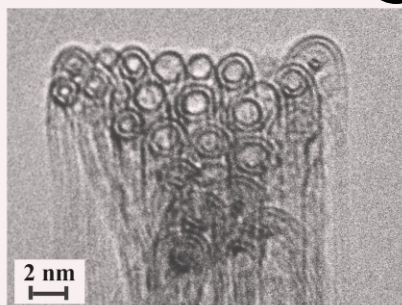
Renewable camphor-derived hydroperoxide: synthesis and use in the asymmetric epoxidation of allylic alcohols

Alessandra Lattanzi,* Patrizia Iannece, Assunta Vicinanza and Arrigo Scettri

A tertiary renewable enantiopure hydroperoxide has been easily synthesised, starting from low cost (+)-(1*R*)-camphor. *Exo-2*, employed in the epoxidation of allylic alcohols, furnished epoxy alcohols in up to 46% ee.



1442



Gram-scale CCVD synthesis of double-walled carbon nanotubes

Emmanuel Flahaut,* Revathi Bacsa, Alain Peigney and Christophe Laurent

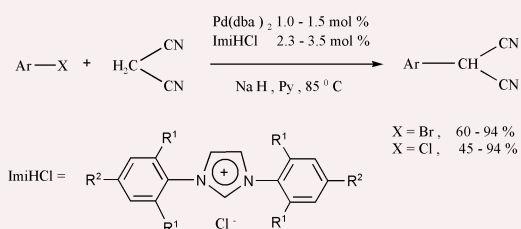
Gram-scale synthesis of clean double-walled carbon nanotubes by catalytic chemical vapour deposition (H_2-CH_4 atmosphere) from a $Mg_{1-x}Co_xO$ solid solution containing additions of Mo oxide. The starting MgO-based catalyst can be removed easily and no further purification is required.

1444



A highly efficient catalytic system for cross-coupling of aryl chlorides and bromides with malononitrile anion by palladium carbene complexes

Chengwei Gao, Xiaochun Tao, Yanlong Qian and Jiling Huang*

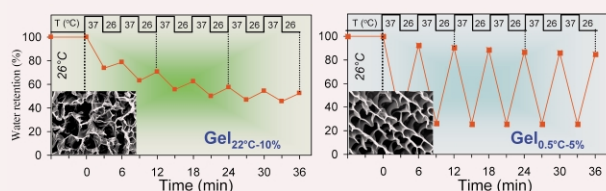


A catalytic system combining Pd(0) with a 1,3-bulkily-substituted aryl imidazolium salt in pyridine as solvent has been proved highly active for the coupling of aryl chlorides and aryl bromides with malononitrile anion and affords the coupling products in satisfactory yields.

1446

Thermosensitive PNIPAAm cryogel with superfast and stable oscillatory properties

Xian-Zheng Zhang and Chih-Chang Chu*



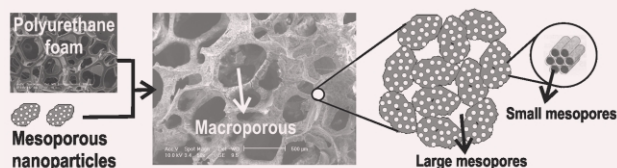
Oscillatory properties of the irregular, conventional hydrogel ($Gel_{22^\circ C-10\%}$) and oriented cryogel ($Gel_{0.5^\circ C-5\%}$) over 3 min temperature cycles in distilled water between 26 and 37 °C.

1448



Large monolithic silica-based macrocellular foams with trimodal pore system

Lenin Huerta, Carmen Guillem, Julio Latorre, Aurelio Beltrán, Daniel Beltrán and Pedro Amorós*



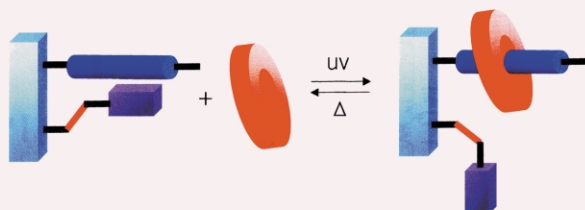
A simple nanotectonic approach for obtaining new silica-based large monoliths with trimodal pore system and foam-like macrocellular voids is presented here. The resulting monoliths admit variable contents of different hetero-elements or organic functional groups.

1450



A pseudorotaxane-based molecular machine controlled by light and thermal stimuli

Kyu-Sung Jeong,* Kyoung-Jin Chang and Young-Jae An

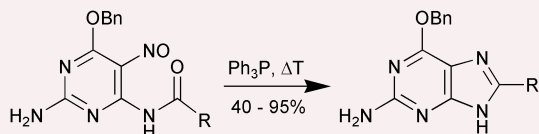


A pseudorotaxane complex between two molecular components, a macrocycle and a thread, forms only when the *trans* isomer of the thread is isomerised into the *cis* isomer.

1452

An improved procedure for the preparation of 8-substituted guanines

Ming Xu, Fabio De Giacomo, Duncan E. Paterson, Tesmol G. George and Andrea Vasella*

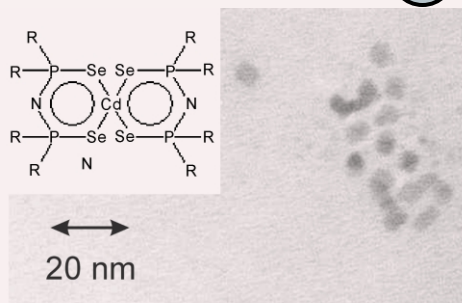


A novel phosphorus(III)-mediated cyclisation of 4-acylamino-5-nitrosopyrimidines to give 8-substituted guanines is described.

1454

A one-step synthesis of cadmium selenide quantum dots from a novel single source precursor

D. J. Crouch, P. O'Brien,* M. A. Malik, P. J. Skabara and S. P. Wright

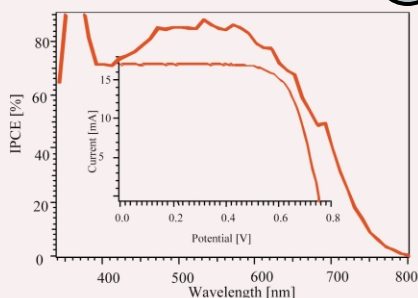


A new approach to the one-step synthesis of cadmium selenide (CdSe) quantum dots is reported using the air stable complex cadmium imino-bis(diisopropylphosphine selenide); the ligand is readily prepared from elemental selenium, quantum dots of comparable quality to those prepared by conventional methods are obtained.

1456

A swift dye uptake procedure for dye sensitized solar cells

Md. K. Nazeeruddin,* R. Splivallo, P. Liska, P. Comte and M. Grätzel*

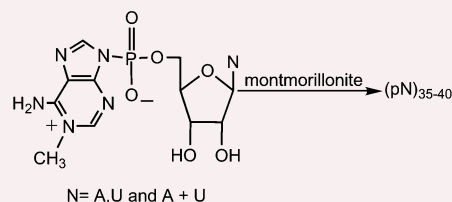


A swift dye uptake procedure for dye sensitized solar cells at room temperature is developed which exhibits power conversion efficiency over 9.18% under one sun, which can be used for online fabrication of cells by screen-printing or inkjet printing.

1458

Synthesis of 35–40 mers of RNA oligomers from unblocked monomers. A simple approach to the RNA world

Wenhua Huang and James P. Ferris

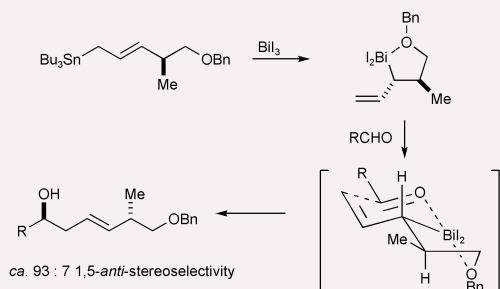


RNA oligomers greater than 35–40 mers in length form in one day in the montmorillonite clay-catalyzed reaction of unblocked RNA monomers at 25 °C in aqueous solution.

1460

Remote stereocontrol using allylstannanes: reversal in stereoselectivity using indium(III) and bismuth(III) halides as promoters

Sam Donnelly, Eric J. Thomas* and Euan A. Arnott



Aldehydes react with 4- and 5-alkoxy-pent-2-enylstannanes in the presence of bismuth(III) or indium(III) halides to give (*E*)-alkenes with useful 1,5-stereocontrol which is complementary to that observed using tin(IV) halides.

ADDITIONS AND CORRECTIONS

1462

Rajendra Prasad, Elisa Murguly
and Neil R. Branda

Synthesis, spectral and electrochemical investigations of bichromophoric pentads possessing tetraazaporphyrin and (bipy)₂Ru^{II}/(phen)₂Ru^{II} moieties

1462

Simon J. Coles, Jeremy G. Frey,
Philip A. Gale, Michael B.
Hursthouse, Mark E. Light, Korakot
Navakhun and Gemma L. Thomas

Anion-directed assembly: the first fluoride-directed double helix

1462

Åsa Sjöholm Timén, Andreas
Fischer and Peter Somfai

Stereoselective aza-Diels–Alder reactions with 2*H*-azirines as dienophiles furnishing highly functionalized tetrahydropyridines

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