

**Cover (far left)**

Hierarchical self-assembly allows the construction of nanostructured polymeric materials with various functions in a systematic way (pp. 2130–2137). The cover picture illustrates self-assembled porosity where the pore walls have been functionalized by polymer brushes (courtesy of A. Nykänen).

Inside cover (left)

The photograph (by Susan T. Carter) shows a small collection of mussels that have been boiled and are ready to be eaten. A bond-line image of the revised structure of azaspiracid-1, a toxin found in edible mussels, and a ball-and-stick image of the synthesized ABCDE ring system of azaspiracid-1 are overlaid on the photograph.



Chemical biology articles published in this journal also appear in the *Chemical Biology Virtual Journal*:
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contents

C73

Chemical Science

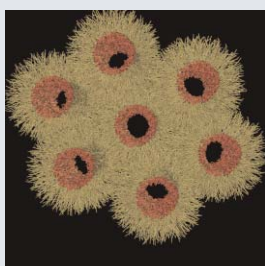
October 2004/Volume 1/Issue 10

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Drawing together the research highlights and news from all RSC publications, *Chemical Science* provides a 'snapshot' of the latest developments across the chemical sciences showcasing newsworthy articles, as well as the most significant scientific advances.

FEATURE ARTICLE

2131



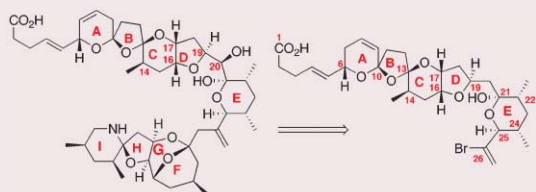
Hierarchical self-assembly in polymeric complexes: Towards functional materials

Olli Ikkala* and Gerrit ten Brinke*

Hierarchically self-assembled polymeric structures can be systematically formed using construction units of different sizes, utilizing competing interactions and combining matching physical bonds, known from supramolecular chemistry. Such concepts allow tuning of the materials properties, as well as responsive and switching properties.

COMMUNICATIONS

2138



Synthesis of the ABCD and ABCDE ring systems of azaspiracid-1

Xiao-Ti Zhou and Rich G. Carter*

The efficient synthesis of the ABCDE ring system of the revised structure of azaspiracid-1 containing the correct stereochemistry at C₆, C₁₀, C₁₃, C₁₄, C₁₆, C₁₇, C₁₉, C₂₁, C₂₂, C₂₄ and C₂₅ has been achieved.

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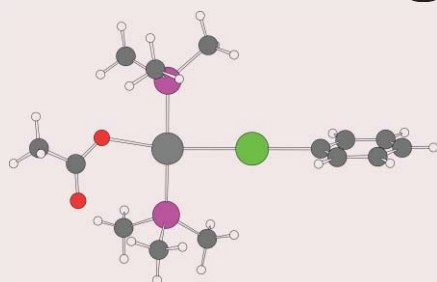
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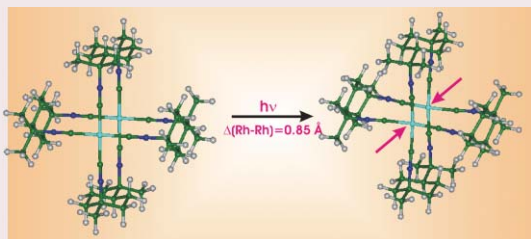


The mechanism of the oxidative addition of aryl halides to Pd-catalysts: a DFT investigation

Lukas J. Gooßen,* Debasis Koley, Holger Hermann and Walter Thiel*

Based on DFT calculations, a new mechanism for the oxidative addition of aryl halides to Pd-catalysts is presented. The key intermediate is an anionic Pd-species in which the aryl halide coordinates to the palladium *via* the halide atom.

2144



A very large Rh–Rh bond shortening on excitation of the $[\text{Rh}_2(1,8\text{-diisocyanop-}p\text{-menthane})_4]^{2+}$ ion by time-resolved synchrotron X-ray diffraction

Philip Coppens, Oksana Gerlits, Ivan I. Vorontsov, Andrey Yu. Kovalevsky, Yu-Sheng Chen, Tim Graber, Milan Gembicky and Irina V. Novozhilova

The first direct measurement by time-resolved X-ray diffraction of the Rh–Rh-distance in the excited triplet state of the $\text{Rh}_2(1,8\text{-diisocyanop-}p\text{-menthane})_4^{2+}$ ion shows a very large contraction of ~ 0.85 Å on excitation.

2146

Recrystallization of {12 D,L-amino acids (Ala, Asp, Arg, Glu, Gln, His, Leu, Met, Ser, Val, Phe, and Tyr) with excess D,L-Asn}

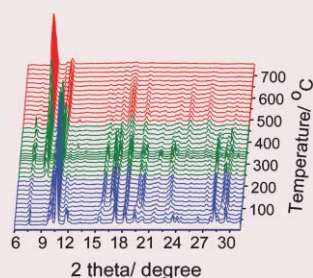
→ All amino acids with the same configuration as Asn were preferentially co-crystallized

Racemic D,L-asparagine causes enantiomeric excess of other coexisting racemic D,L-amino acids during recrystallization: a hypothesis accounting for the origin of L-amino acids in the biosphere

Shosuke Kojo,* Hiromi Uchino, Mayu Yoshimura and Kyoko Tanaka

In recrystallizations using a mixture of 12 D,L-amino acids with excess D,L-asparagine, all amino acids with the same configuration as asparagine were preferentially co-crystallized, indicating that it is the nature of a mixture of racemic amino acids to produce a spontaneous high enantiomeric excess.

2148

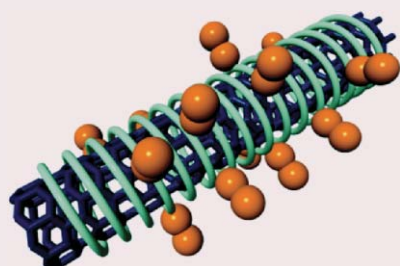


A thermally stable nanoporous nickel 5-sulfoisophthalate; crystal structure and adsorption properties

Dae Sung Kim, Paul M. Forster, Ronan Le Toquin and Anthony K. Cheetham*

A nanoporous nickel coordination polymer demonstrates the utility of 5-sulfoisophthalate as a ligand for the synthesis of new hybrid systems.

2150

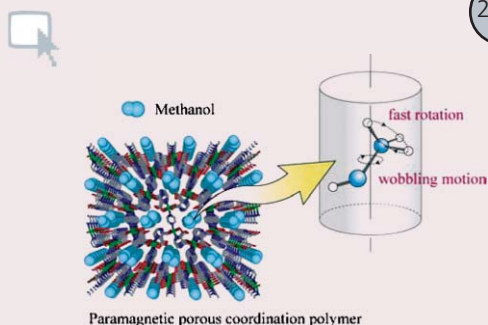


Single-walled carbon nanotubes acquire a specific lectin-affinity through supramolecular wrapping with lactose-appended schizophyllan

Teruaki Hasegawa, Tomohisa Fujisawa, Munenori Numata, Mariko Umeda, Takahiro Matsumoto, Taro Kimura, Shiro Okumura, Kazuo Sakurai and Seiji Shinkai*

Single walled carbon nanotubes can be entrapped within a helical superstructure composed of schizophyllan bearing lactoside-appendages to show an excellent water-solubility as well as a specific lectin-affinity.

2152

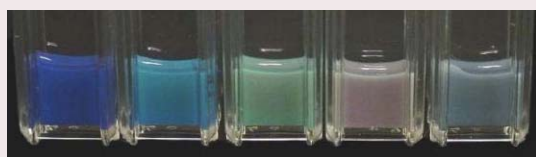


Motion of methanol adsorbed in porous coordination polymer with paramagnetic metal ions

Satoshi Horike, Ryotaro Matsuda, Ryo Kitaura, Susumu Kitagawa,* Takahiro Iijima, Kazunaka Endo, Yoshiki Kubota and Masaki Takata

Dynamic aspects of methanol adsorbed in 1D nanochannels of a paramagnetic pillared-layer coordination polymer have been elucidated by ^2H NMR spectroscopy together with X-ray crystallography and thermodynamic analysis.

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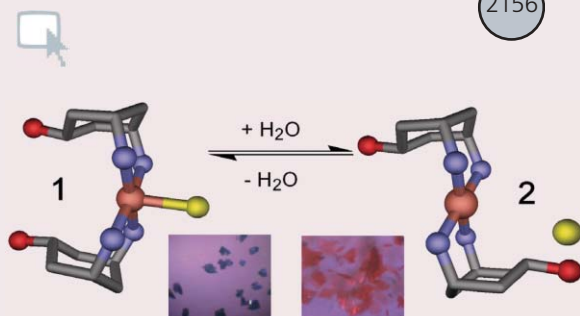


Preparation of poly(3,4-ethylenedioxythiophene) (PEDOT) coated silica core-shell particles and PEDOT hollow particles

Moon Gyu Han and Stephen H. Foulger*

The preparation of nanometre-sized poly(3,4-ethylenedioxythiophene) (PEDOT) coated silica core-shell particles and their corresponding PEDOT hollow particles is presented. The coated core-shell particles could be induced to self-assemble into a crystalline colloidal array, where the observed reflective characteristics of the solution could be varied over the entire visible wavelength range through manipulation of the particle concentration.

2156

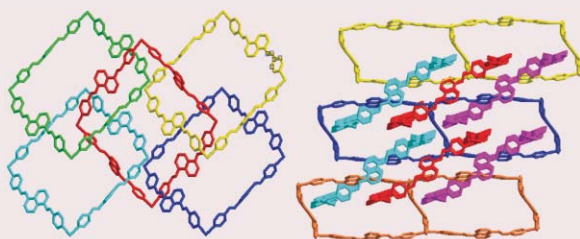


Secondary coordination sphere controlled reversible geometry reorganisations in copper(II) complexes

John Fielden, De-Liang Long and Leroy Cronin*

Reversible geometry reorganisations are demonstrated by *cis*-3,5-diamino-*trans*-hydroxycyclohexane (*cis,trans*-DAHc) copper(II) fluoride complexes. The concentration of water in the mother liquor allows the interconversion of blue crystals of **1** to red crystals of **2** via subtle changes in the solvent and secondary coordination sphere.

2158

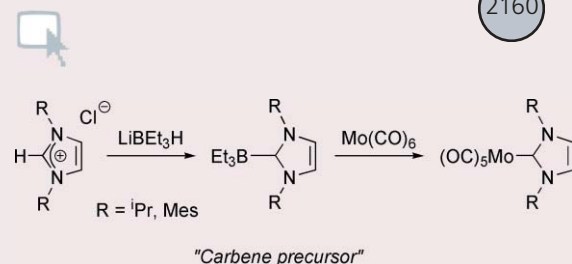


Assembly of large simple 1D and rare polycatenated 3D molecular ladders from T-shaped building blocks containing a new, long *N,N'*-bidentate ligand

Cheng-Yong Su, Andrea M. Goforth, Mark D. Smith and Hans-Conrad zur Loye*

Assembly of similar T-shaped building blocks with different metal centers affords a single molecular ladder $[\text{Co}_2(\text{nbpy}_4)_3(\text{NO}_3)_4] \cdot \text{solvents}$ and a four-fold polycatenated 3D ladder structure $[\text{Cd}_2(\text{nbpy}_4)_3(\text{NO}_3)_4]$ ($\text{nbpy}_4 = N,N'$ -bis-(4-pyridinylmethylene)-1,5-naphthalenediamine).

2160

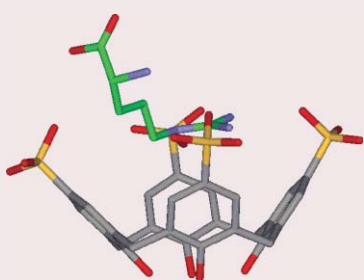


Synthesis and reactivity of triethylborane adduct of *N*-heterocyclic carbene: versatile synthons for synthesis of *N*-heterocyclic carbene complexes

Yoshitaka Yamaguchi,* Taigo Kashiwabara, Kenichi Ogata, Yumiko Miura, Yoshiyuki Nakamura, Kimiko Kobayashi and Takashi Ito*

The one-pot synthesis of the BEt_3 -adduct of imidazol-2-ylidene and its utilization for the preparation of a transition metal complex as well as a main group element complex are described.

2162

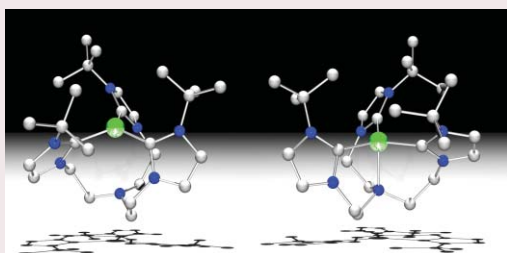


A new packing motif for *para*-sulfonatocalix[4]arene: the solid state structure of the *para*-sulfonatocalix[4]arene D-arginine complex

Adina Lazar, Eric Da Silva, Alda Navaza,* Carole Barbey and Anthony W. Coleman*

The complex of *para*-sulfonatocalix[4]arene with arginine presents a high degree of complexity, with four host–guest systems, each containing crystallographically independent arginine guest molecules, interconnected by two independent arginines, and with a diagonal aqua-channel.

2164

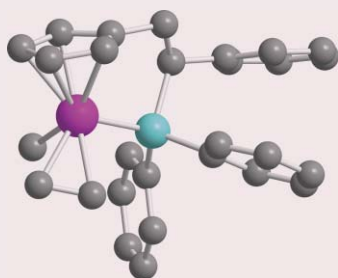


Synthesis and characterization of electron-rich nickel tris-carbene complexes

Xile Hu, Ingrid Castro-Rodriguez and Karsten Meyer*

The synthesis of a series of nickel complexes with the nitrogen anchored *N*-heterocyclic tris-carbene ligand TIMEN is described. The solid-state molecular structures and electrochemistry of the [(TIMEN)Ni(0)] and [(TIMEN)Ni(I)] complexes were examined.

2166

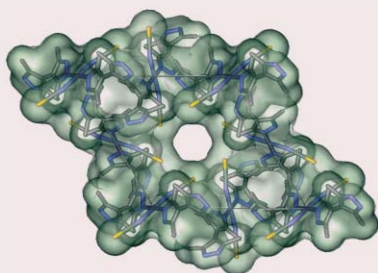


Isolation and structural characterization of an optically active intermediate in the oxidative addition of methyl iodide on a rhodium(I) centre

Angelino Doppiu, Ulli Englert and Albrecht Salzer*

The optically pure cationic complex shown is the first example of a key intermediate in the oxidative addition reaction of methyl iodide on a rhodium(I) centre that has been structurally characterized by X-ray diffraction.

2168

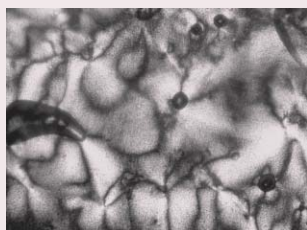


Nanoporosity of an interpenetrated NbO-type molecular framework studied by single crystal X-ray diffraction

Prasad V. Ganesan and Cameron J. Kepert*

The molecular framework host [Fe(NCS)₂(tmbpz)₂] displays minimal structural relaxation following both the partial and complete desorption of acetonitrile guest molecules from the 1-D channels within its structure.

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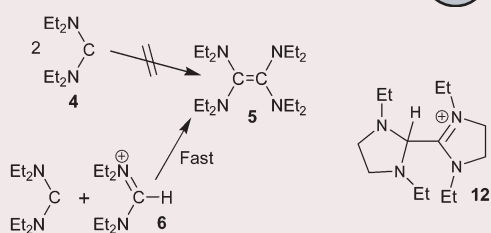


Water-in-water mesophases for templating inorganics

Andreas Taubert, Ernst Furrer and Wolfgang Meier*

A water-in-water mesophase that contains only hydrophilic domains is reported for the first time; the mesophase templates highly porous calcium phosphate.

2172

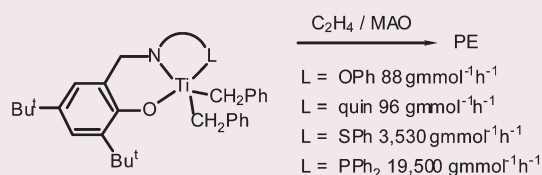


Bis(diethylamino)carbene and the mechanism of dimerisation for simple diaminocarbenes

Roger W. Alder,* Leila Chaker and François P. V. Paolini

Free bis(diethylamino)carbene **4** does not dimerise to **5** in THF at ambient temperature, but dimerisation is rapid in the presence of amidinium ion **6**; in a related case dimerisation intermediate **12** can be observed.

2174

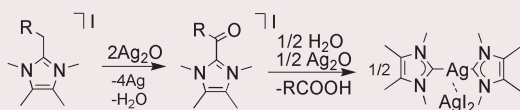


The surprisingly beneficial effect of soft donors on the performance of early transition metal olefin polymerisation catalysts

Daniel C. H. Oakes, Brian S. Kimberley, Vernon C. Gibson,* David J. Jones, Andrew J. P. White and David J. Williams

Titanium complexes stabilised by tridentate phenoxy-amide ligands bearing soft (S, P) pendant donors afford ethylene polymerisation catalysts with vastly superior activities compared to their hard donor relatives.

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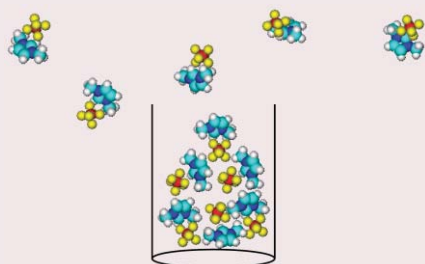


Unexpected oxidative C–C cleavage in the metallation of 2-substituted imidazolium salts to give N-heterocyclic carbene complexes

Anthony R. Chianese, Brian M. Zeglis and Robert H. Crabtree*

Imidazolium salts blocked at C2 by methyl or benzyl groups undergo oxidative C–C cleavage in the presence of excess silver oxide to give silver–NHC complexes.

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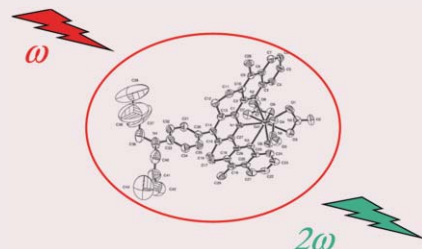


Estimates of internal energies of vaporisation of some room temperature ionic liquids

Konrad Swiderski, Andrew McLean,* Charles M. Gordon* and D. Huw Vaughan

ΔU_{vap} values between 180 and 220 kJ mol^{-1} have been determined for a series of room temperature ionic liquids using a method based on the reaction of singlet molecular oxygen with 1,4-dimethylnaphthalene

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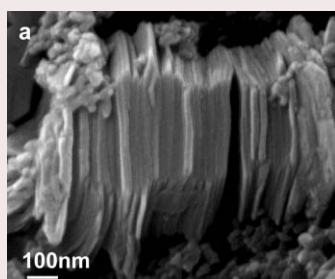


First lanthanide dipolar complexes for second-order nonlinear optics

Katell Sénéchal, Loïc Toupet, Isabelle Ledoux, Joseph Zyss, Hubert Le Bozec* and Olivier Maury*

New push–pull NLO-phores based on lanthanide complexes ($Ln = \text{La, Gd, Dy, Yb}$) featuring an annelated dibutylaminophenyl functionalised terpyridyl ligand have been synthesised and shown to exhibit large first-order hyperpolarizability.

2182

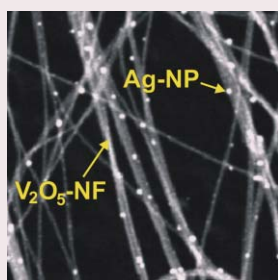


Microemulsion-based synthesis of stacked calcium carbonate (calcite) superstructures

Chulanapa Viravaidya, Mei Li and Stephen Mann*

The spontaneous formation of novel complex architectures consisting of crystallographically oriented stacks of calcite nanosheets is achieved by controlled crystallization in water-in-oil microemulsions. The stacks develop by helical propagation, which traps the surfactant molecules to produce a spirally interconnected lamellar nanocomposite.

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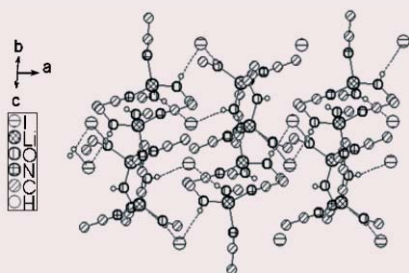


A direct synthetic approach to vanadium pentoxide nanofibres modified with silver nanoparticles

Ulrich Schlecht, Berit Guse, Isabelle Raible, Tobias Vossmeier and Marko Burghard*

Silver ions have shown a remarkable ability to enhance the growth speed of vanadium pentoxide nanofibres (V_2O_5 -NF) in aqueous solution at room temperature. This method opens access to V_2O_5 nanofibres decorated with silver nanoparticles (Ag-NP).

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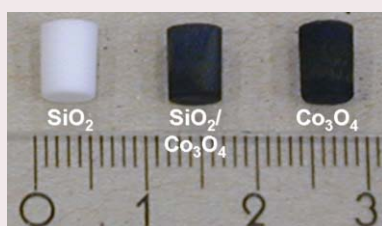


Polymer-in-salt like conduction behavior of small-molecule electrolytes

Hongxia Wang, Zhaoxiang Wang, Bofei Xue, Qingbo Meng,* Xuejie Huang and Liquan Chen*

Polymer-in-salt conduction behavior is observed in solid electrolytes composed exclusively of LiI and small molecules 3-hydroxypropionitrile. Reinforced hydrogen bonding and formation of ionic clusters are found responsible for this abnormal phenomenon at high salt content.

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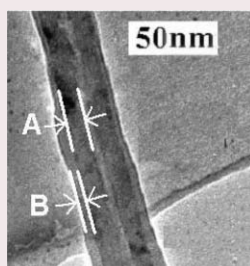


Hierachically porous nanocrystalline cobalt oxide monoliths through nanocasting

Jan-Henrik Smått, Bernd Spliethoff, Jarl B. Rosenholm and Mika Lindén*

Nanocast Co_3O_4 monoliths exhibiting a multimodal hierarchical porosity have been synthesized by direct replication from silica. The monoliths consist of nanosized, fully crystalline Co_3O_4 particles linked together to form the macroscopic object, and thus the structural integrity of the replica is maintained over several orders of magnitude in length.

2190

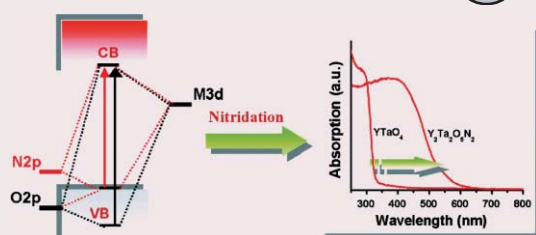


Carbon nanotube/poly(2,4-hexadiyne-1,6-diol) nanocomposites prepared with the aid of supercritical CO_2

Xinhua Dai, Zhimin Liu,* Buxing Han, Zhenyu Sun, Yong Wang, Jian Xu,* Xinglin Guo, Ning Zhao and Jing Chen

A carbon nanotube(CNT)/poly(2,4-hexadiyne-1,6-diol) (HDiD) composite has been fabricated with the aid of supercritical CO_2 . The figure shows the TEM image of the composite, in which A and B denote the CNT walls and poly(HDiD) layer, respectively.

2192

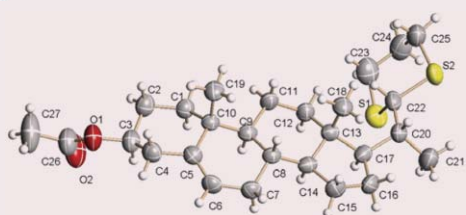


Water reduction and oxidation on Pt–Ru/Y₂Ta₂O₅N₂ catalyst under visible light irradiation

Meiying Liu, Wansheng You, Zhibin Lei, Guohua Zhou, Jianjun Yang, Guopeng Wu, Guijun Ma, Guoyou Luan, Tuyoshi Takata, Michikazu Hara, Kazunari Domen* and Can Li*

Y₂Ta₂O₅N₂ synthesized by nitridation in ammonia shows high photocatalytic activity for O₂ evolution and enhanced H₂ evolution under visible light irradiation when Pt and Ru are simultaneously loaded.

2194

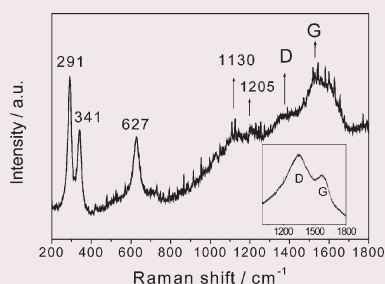


Ionic hydrogenation of C-20, 22-ketene dithioacetal: stereoselective synthesis of steroidal C (20R) aldehydes

Bapurao B. Shingate, Braja G. Hazra,* Vandana S. Pore, Rajesh G. Gonnade and Mohan M. Bhadbhade

Homologation of 16-dehydropregnenolone acetate **7** leads to excellent stereocontrolled synthesis of unnatural C (20R) aldehydes **4** and **6** through compound **13**.

2196

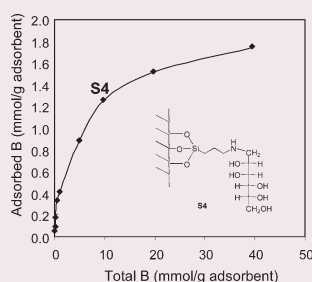


Facile deposition of copper-doped diamond-like carbon nanocomposite films by a liquid-phase electrochemical route

Heqing Jiang, Lina Huang, Zhijun Zhang,* Tao Xu and Weimin Liu

The first example of deposition of Cu doped diamond-like nanocomposite films by a facile liquid-phase electrochemical route is reported.

2198



Efficient boron removal by using mesoporous matrices grafted with saccharides

Gertrudis Rodríguez-López, M. Dolores Marcos,* Ramón Martínez-Mañez,* Félix Sancenón, Juan Soto, Luis A. Villaescusa, Danile Beltrán and Pedro Amorós

Highly efficient boron removal from water was achieved by using mesoporous silica materials functionalised with saccharides.

2200

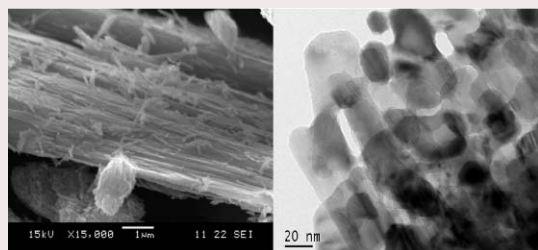


Redox couples in the selective catalytic reduction of NO_x with hydrocarbons over Co–ZSM-5 and Ni–ZSM-5 catalysts: an FT-IR study

Mihail Mihaylov and Konstantin Hadjiivanov*

Co²⁺/Co⁺ and Ni²⁺/Ni⁺ redox couples operate in the selective catalytic reduction of NO_x by hydrocarbons over Co–ZSM-5 and Ni–ZSM-5 catalysts.

2202

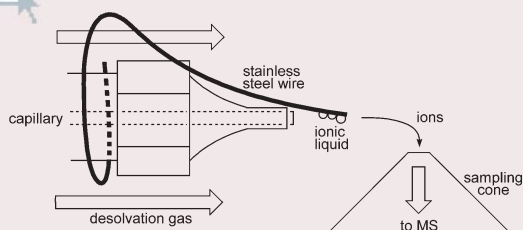


A simple approach to mesoporous fibrous titania from potassium dititanate

Ming He, Xiao-Hua Lu,* Xin Feng, Lei Yu and Zhu-Hong Yang

Fibrous titania with a mesoporous structure is synthesized from $K_2Ti_2O_5$ by a simple approach, which involves a novel hydrolytic reaction for the formation of a potassium-rich nanophase and the generation of an amorphous intermediate.

2204

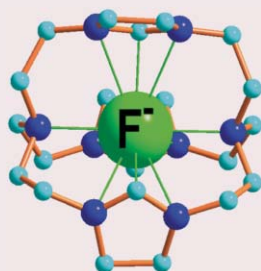


Direct probe electrospray (and nanospray) ionization mass spectrometry of neat ionic liquids

Paul J. Dyson,* Isam Khalaila, Sarah Luetzgen, J. Scott McIndoe* and Dongbin Zhao

Analysis of ionic liquids and analytes dissolved in them by electrospray ionisation mass spectrometry is greatly facilitated by the presence of molecular solvents.

2206

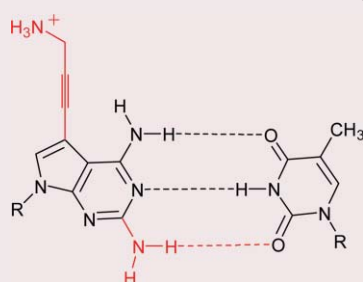


Imidazolidinium-based robust crypt with unique selectivity for fluoride anion

Bing-guang Zhang, Ping Cai, Chun-ying Duan,* Ren Miao, Long-gen Zhu, Takashi Niitsu* and Hakuai Inoue

The new imidazolidinium-containing crypt receptor exhibits unique and high selectivity for fluoride anion through steric requirements and the cooperativity of multiple intramolecular binding.

2208



An analogue of adenine that forms an "A:T" base pair of comparable stability to G:C

James Booth, W. Jon Cummins and Tom Brown*

7-Aminopropargyl-7-deaza-2,6-diaminopurine (**D**) has been incorporated into oligodeoxynucleotides. **D**:T has similar thermodynamic stability to G:C and is a stable analogue of A:T.

2210

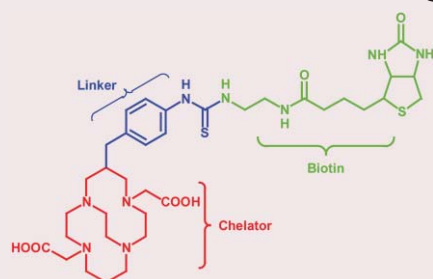
Hydrogen storage of metal nitride by a mechanochemical reaction

Yoshitsugu Kojima* and Yasuaki Kawai



Metal imides (Li_2NH , $CaNH$), a metal amide ($LiNH_2$) and metal hydrides (LiH , CaH_2) were synthesized by ball milling of their respective metal nitrides (Li_3N , Ca_3N_2) in a H_2 atmosphere at 1 MPa and at room temperature. This reaction does not occur under ambient conditions without a mechanochemical reaction mechanism.

2212



Ultrastable complexes for *in vivo* use: a bifunctional chelator incorporating a cross-bridged macrocycle

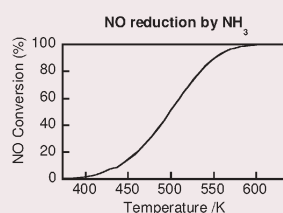
Elizabeth A. Lewis, Ross W. Boyle and Stephen J. Archibald*

The synthesis, copper(II) complexation and biotin conjugation of a bifunctional chelator incorporating a cross-bridged macrocycle are described.

2214



Nonhydrolytic sol-gel synthesis:
 $\text{VOCl}_3 + 10 \text{TiCl}_4 + 21.5 \text{Pr}_2\text{O}$
 $\downarrow 383 \text{ K}$
 mixed V_2O_5 - TiO_2 catalyst
 for deNO_x application

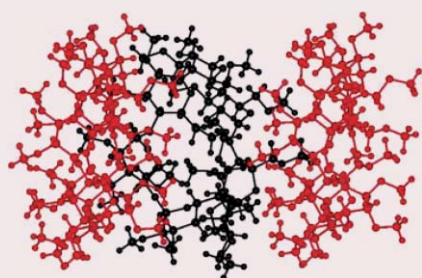


Novel non-hydrolytic synthesis of a V_2O_5 - TiO_2 xerogel for the selective catalytic reduction of NO_x by ammonia

Aurelian F. Popa, P. Hubert Mutin, André Vioux,*
 Gerard Delahay and Bernard Coq

A vanadia-titania mesoporous xerogel (10.5 wt% V_2O_5) was prepared from chloride precursors using a one-step non-hydrolytic sol-gel route and subsequent drying at ambient pressure; after calcination at 773 K for 5 h no crystalline V_2O_5 was detected and the resulting mixed oxide exhibited remarkable activity in the selective reduction of NO with NH_3 .

2216

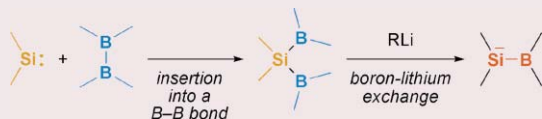


New crystalline forms of permethylated β -cyclodextrin

Mino R. Caira,* Susan A. Bourne, Welcome T. Mhlongo and Pamela M. Dean

Hitherto unknown crystalline phases of permethylated β -cyclodextrin, obtained in the presence of drug molecules, were structurally characterized and found to contain the host molecule in a novel conformation.

2218

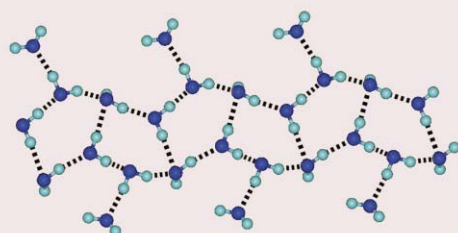


Unprecedented insertion reaction of a silylene into a B-B bond and generation of a novel borylsilyl anion by boron-metal exchange reaction of the resultant diborylsilane

Takashi Kajiwara, Nobuhiro Takeda, Takahiro Sasamori and Norihiro Tokitoh*

Insertion of a silylene into a B-B bond afforded a diborylsilane, which reacted with an alkyllithium to give the first borylsilyl anion *via* a boron-lithium exchange reaction.

2220

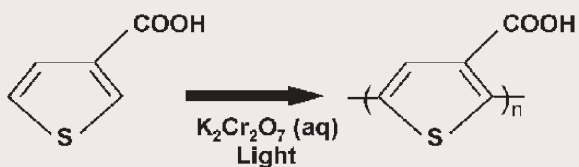


Cyclic water pentamer in a tape-like structure

Bao-Qing Ma,* Hao-Ling Sun and Song Gao*

The topology and structural parameters of the pentamer are strikingly in agreement with previous both experimental and theoretical studies, providing important crystallographic evidence supporting the established cyclic geometry of the isolated water pentamer.

2222

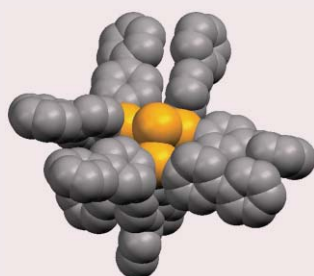


Photochemical polymerization of thiophene derivatives in aqueous solution

Sergey A. Piletsky, Elena V. Piletska, Kal Karim, Frank Davis,*
Seamus P. J. Higson and Anthony P. F. Turner

A novel method of photochemical polymerization of thiophene derivatives in aqueous solution, catalyzed by potassium dichromate and initiated by illumination. Oligomers of 0.6 and 0.8 kDa are synthesized and characterized by MALDI, FT-IR and UV-vis spectroscopy, and gel permeation chromatography.

2224

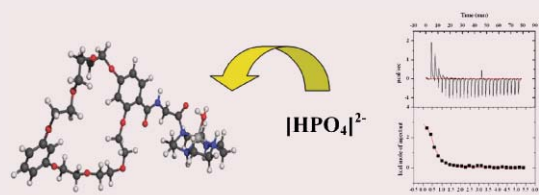


New Pb–Pb bonds: syntheses and molecular structures of hexabiphenyldiplumbane and tri(trisbiphenylplumbyl)plumbate

Yuzhong Wang, Brandon Quillian, Pingrong Wei,
Xiao-Juan Yang and Gregory H. Robinson*

Reaction of lead(II) chloride with biphenylmagnesium bromide yields $Bp_3Pb-PbBp_3$ and $[(THF)_3Mg(\mu-Cl)_3Mg(THF)_3][Pb(PbBp_3)_3]$ (Bp = biphenyl), which, upon single crystal X-ray crystallographic analysis, reveals an interesting variation of Pb–Pb bond distances.

2226

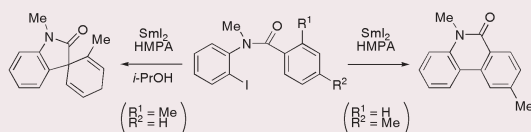


A modular ditopic crown-shielded phosphate ion-pair receptor

Patrick Gunning, Andrew C. Benniston* and Robert D. Peacock*

The synthesis of a modular hybrid receptor containing both an aza and an oxa crown is described. A complete thermodynamic characterisation of the binding properties of the zinc complex of the receptor and of its aza crown precursor towards phosphate are presented.

2228

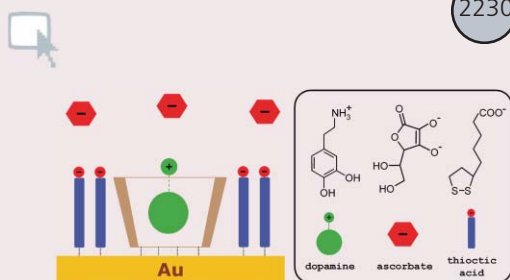


The first samarium(II)-mediated aryl radical cyclisation onto an aromatic ring

Hiroaki Ohno, Hiroki Iwasaki, Toru Eguchi and
Tetsuaki Tanaka*

Intramolecular arylation of aryl radicals was mediated by $SmI_2/HMPA$ in the presence of *i*-PrOH to give spirocycles and/or reduced *cine*-cyclised products, while the reaction in the absence of *i*-PrOH gave the rearomatised fused rings.

2230

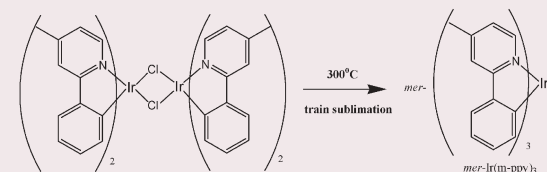


A supramolecular approach to the selective detection of dopamine in the presence of ascorbate

Alex Fragoso,* Eduardo Almirall, Roberto Cao, Luis Echegoyen
and Raúl González-Jonte

Dopamine can be detected selectively in the presence of ascorbate at a gold electrode modified by a β -cyclodextrin/thioctic acid mixed monolayer.

2232

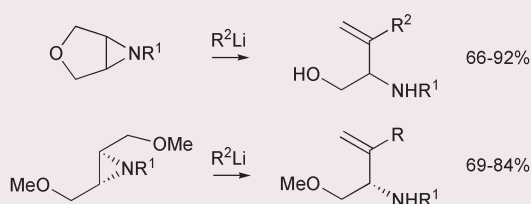


High efficiency *mer*-iridium complexes for organic light-emitting diodes

Cheng-Hsien Yang, Kai-Hung Fang, Chun-Hung Chen and I-Wen Sun*

Meridional iridium complexes for phosphorescent OLEDs were prepared by train sublimation of the dimer. In this approach, we have found that *mer*-Ir(m-ppy)₃ in fact results in a blue shift with respect to *fac*-Ir(ppy)₃ and produces a fairly pure green emission. This result suggests a new direction in developing novel emitters for OLEDs.

2234

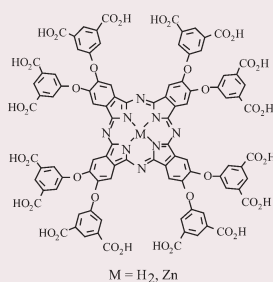


Unsaturated 1,2-amino alcohols and ethers from aziridines and organolithiums

David M. Hodgson,* Bogdan Štefane, Timothy J. Miles and Jason Witherington

Aziridines of 2,5-dihydrofuran and 1,4-dimethoxybut-2-enes undergo organolithium-induced α -deprotonation, subsequent insertion and elimination, to give unsaturated 1,2-amino alcohols and ethers.

2236

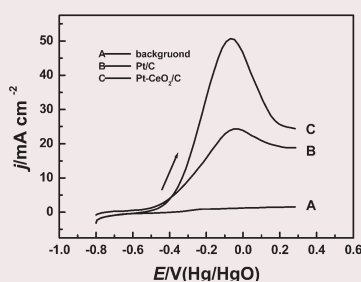


Synthesis and *in vitro* photodynamic activity of new hexadeca-carboxy phthalocyanines

Chi-Fung Choi, Po-Ting Tsang, Jian-Dong Huang, Elaine Y. M. Chan, Wing-Hung Ko, Wing-Ping Fong* and Dennis K. P. Ng*

Two new hexadeca-carboxy phthalocyanines have been synthesised and evaluated for their photodynamic activities. The zinc(II) analogue exhibits a high class-A scavenger-receptor mediated photocytotoxicity towards the J774 murine macrophage cell line.

2238

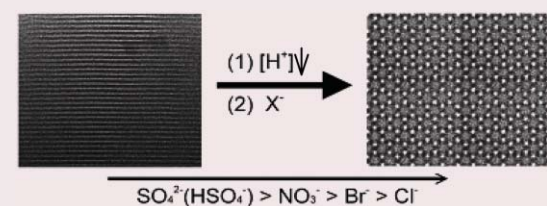


Novel Pt/CeO₂/C catalysts for electrooxidation of alcohols in alkaline media

Changwei Xu and Pei Kang Shen*

Electrochemical oxidation of methanol, ethanol, glycerol and ethylene glycol (EG) on novel Pt-CeO₂/C catalysts in alkaline media has been studied and shows an improved performance in terms of the electrode activity and the poisoning resistance.

2240



The anion sequence in the phase transformation of mesostructures templated by non-ionic block copolymers

Jiawei Tang, Chengzhong Yu,* Xufeng Zhou, Xiaoxia Yan and Dongyuan Zhao

A *p6m* to *Ia3d* phase evolution is achieved by simply adjusting the acidity and/or anion species in the presence of block copolymers; the unusual behavior of block copolymer templated mesostructured solids is revealed to be SO₄²⁻ (HSO₄⁻) > NO₃⁻ > Br⁻ > Cl⁻.

Fang Gao, Robert N. Compton and
Richard M. Pagni*

The multiphoton photochemistry of 2-iodooctane in methanol

Zuocheng Zhou, Xiaoying Bao and X. S. Zhao*

Synthesis, characterization and optical properties of ordered macroporous organosilicas

Hisashi Shimakoshi, Mami Tokunaga,
Tatsushi Baba and Yoshio Hisaeda*

Photochemical dechlorination of DDT catalyzed by a hydrophobic vitamin B₁₂ and a photosensitizer under irradiation with visible light

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