

Cover
Bridged Nucleic Acids (BNAs), showing their duplex- and triplex-forming abilities.



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contents

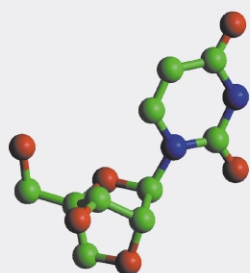
FEATURE ARTICLE

1653

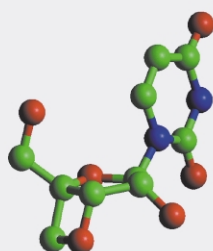
BNAs: novel nucleic acid analogs with a bridged sugar moiety

Takeshi Imanishi* and Satoshi Obika

This article deals with our recent studies on the synthesis of BNAs (Bridged Nucleic Acids), novel nucleic acid analogs bearing a preorganized sugar conformation by a bridged structure. Duplex- and triplex-forming abilities of the BNA modified oligonucleotides are also described.



2',4'-BNA/LNA



3',4'-BNA

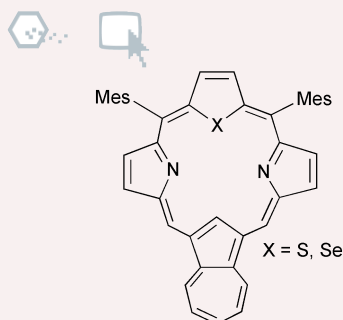
COMMUNICATIONS

1660

First structural characterization of core modified 10,15-*meso* aryl azuliporphyrins: observation of C–H... π interaction between pyrrole β -CH and mesityl ring

Sundararaman Venkatraman, Venkataramanarao G. Anand, Viswanathan PrabhuRaja, Harapriya Rath, Jeyaraman Sankar, Tavarekere K. Chandrashekar,* Weijie Teng and Karin Ruhlandt Senge

Syntheses of modified *meso* aryl azuliporphyrins, their structure and the formation of linear supramolecular arrays directed through C–H... π interactions in the solid state are reported.

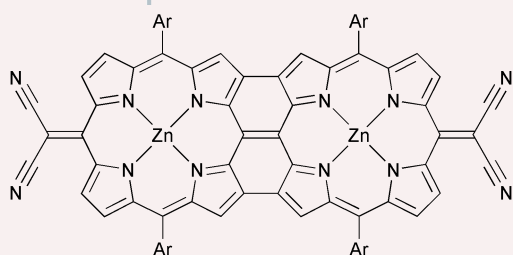


1662

Fusion and planarization of a quinoidal porphyrin dimer

Iain M. Blake, Alexander Krivokapic, Martin Katterle and Harry L. Anderson*

A triply-linked quinoidal porphyrin dimer is compared with its singly-linked precursor: fusion planarizes the π -system and red-shifts the absorption while increasing the gap between the first oxidation and first reduction.

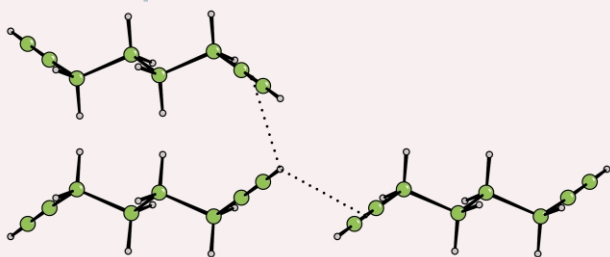


1664

C–H··· π interactions in the low-temperature crystal structures of α,ω -unsaturated linear hydrocarbons

Andrew D. Bond

The low-temperature crystal structures of 1,7-octadiene (C_8H_{14}), 1,9-decadiene ($C_{10}H_{18}$), 1,7-octadiyne (C_8H_{10}) and 1,9-decadiyne ($C_{10}H_{14}$) reveal the role of C–H··· π interactions in α,ω -unsaturated linear hydrocarbons in the solid state.

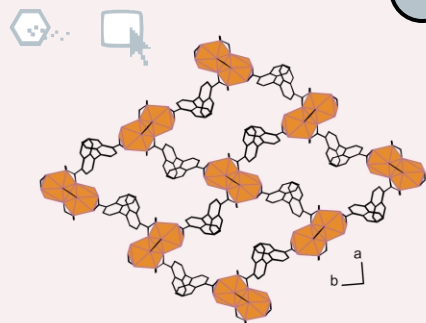


1666

Homochiral 3D lanthanide coordination networks with an unprecedented 4^96^6 topology

Yong Cui, Helen L. Ngo, Peter S. White and Wenbin Lin*

Homochiral 3D lanthanide open frameworks based on enantiopure atropisomeric dicarboxylic acid bridging ligands exhibit an unprecedented 4^96^6 topology, and possess ethoxy-protected BINOL functionalities that are pointing toward the open channels.

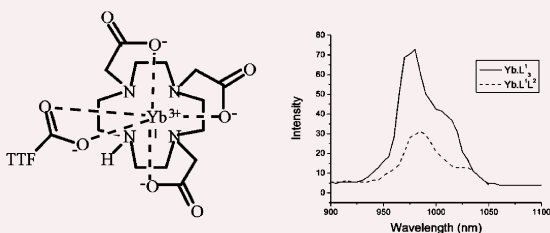


1668

Interaction between tetrathiafulvalene carboxylic acid and ytterbium DO3A: solution state self-assembly of a ternary complex which is luminescent in the near IR

Stephen Faulkner,* Benjamin P. Burton-Pye, Tahir Khan, Leigh R. Martin, Steven D. Wray and Peter J. Skabara*

Tetrathiafulvalene carboxylate associates with a charge neutral complex, Yb.DO3A, giving rise to a novel ternary species. Ytterbium centred luminescence occurs as a result of energy transfer from the tetrathiafulvalene unit.

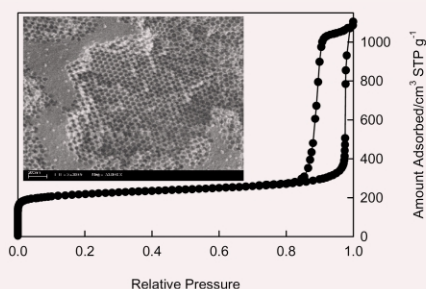


1670

Synthesis of an ordered macroporous carbon with 62 nm spherical pores that exhibit unique gas adsorption properties

Soonki Kang, Jong-Sung Yu,* Michal Kruk and Mietek Jaroniec*

An ordered macroporous carbon with 62 nm spherical pores was synthesized using colloidal-crystal templating and found to exhibit unique gas adsorption properties that have been so far attributed to adsorption in mesopores.

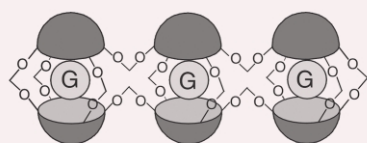


1672

Formation of a tris-capsule and a tris-carceplex from a cyclic six-bowl assembly

Rajesh Mungaroo and John C. Sherman*

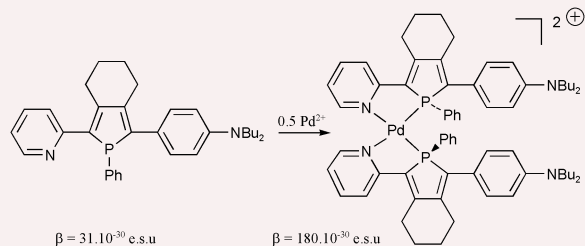
A tris-carceplex and a tris-capsule have been prepared. The related irreversible and reversible assembly processes to form these species appear to be highly efficient.

Tris-carceplex • (methyl acetate)₃

1674

Ligand *trans*-effect: using an old concept as a novel approach to bis(dipolar) NLO-phores

Claire Fave, Muriel Hissler, Katell Sénéchal, Isabelle Ledoux, Joseph Zyss and Régis Réau*

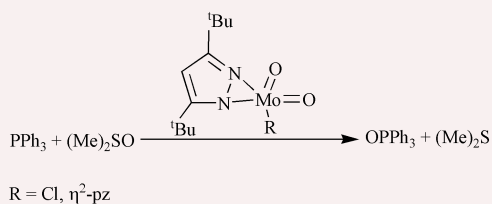


A novel family of dipolar NLO-phores based on the phosphole π -bridge are described. An unprecedented in-plane and parallel alignment of these heteroditopic dipoles *via* stereoselective coordination on Pd(II) centres leads to complexes exhibiting enhanced NLO-activities.

1676

The first molybdenum dioxo compounds with η^2 -pyrazolate ligands: crystal structure and oxo transfer properties

Kerstin Most, Sinje Köpke, Fabio Dall'Antonia and Nadia C. Möschen-Zanetti*

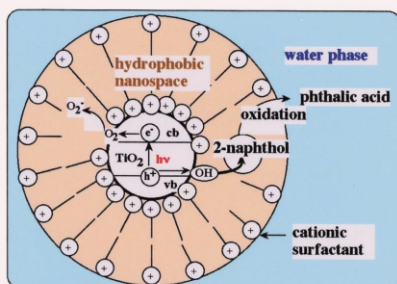


Novel η^2 -coordinate pyrazolate compounds that contain the $[\text{MoO}_2]^{2+}$ core are accessible *via* simple synthesis and are active for oxo transfer catalysis of triphenylphosphine in the presence of DMSO.

1678

Heterosupramolecular photocatalysis: oxidation of organic compounds in nanospaces between surfactant bilayers formed on TiO_2

Hiroaki Tada,* Hideo Matsui, Fumitaka Shiota, Megumi Nomura, Seishiro Ito, Masakuni Yoshihara and Kunio Esumi

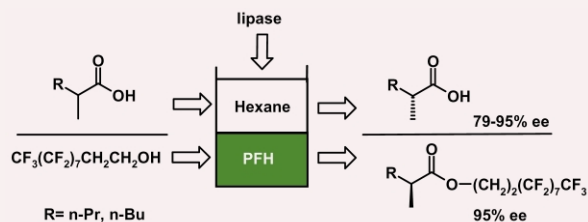


A heterosupramolecular photocatalyst consisting of TiO_2 and a cationic surfactant bilayer formed on the surface has achieved a very high level of activity in the oxidation of 2-naphthol through the cooperation of the inorganic and organic components.

1680

Enantiomeric partitioning using fluoruous biphasic methodology for lipase-mediated (trans)esterifications

Petr Beier and David O'Hagan*

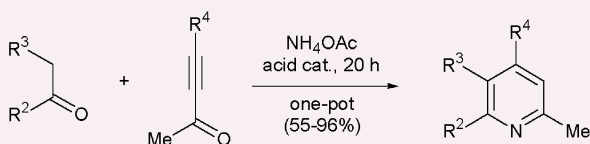


Lipase-catalysed (trans)esterification reactions in homogenous perfluorocarbon–hydrocarbon solvents enabled direct enantiomeric partitioning (up to 95% ee) of the products by liquid–liquid separation.

1682

A new one-pot three-component condensation reaction for the synthesis of 2,3,4,6-tetrasubstituted pyridines

Mark C. Bagley,* James W. Dale and Justin Bower

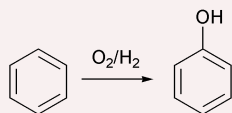


The one-pot three-component condensation of a β -ketoester, alkyne and ammonia is catalysed by Brønsted or Lewis acids and gives highly substituted pyridines in good yield and with total regiocontrol.

1684

New direct hydroxylation of benzene with oxygen in the presence of hydrogen over bifunctional ion-exchange resins

Wilhelm Laufer and Wolfgang F. Hoelderich*

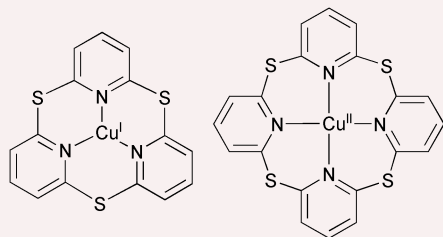


Benzene was hydroxylated to phenol with O_2/H_2 over Pd/Pt containing acid resins. Other oxygenates were hydroquinone and catechol. Especially strong acid Nafion/SiO₂ composites were found to be active and selective.

1686

Thia-calix[n]pyridines, synthesis and coordination to Cu(I,II) ions with both N and S donor atoms

Rika Tanaka, Toshihiro Yano, Takanori Nishioka, Kunio Nakajo, Brian K. Breedlove, Kentaro Kimura, Isamu Kinoshita* and Kiyoshi Isobe

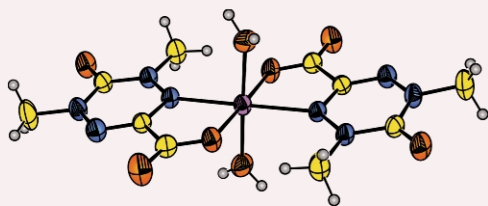


The novel thia-calix[n]pyridines ($n = 3, 4$) coordinated to copper ions through nitrogen and sulfur atoms to give multinuclear complexes whose structures have been determined by X-ray crystallography and NMR spectra.

1688

Synthesis and coordination chemistry of a water-soluble verdazyl radical. structures and magnetic properties of $M(H_2O)_2(vdCO_2)_2 \cdot 2H_2O$ ($M = Co, Ni$; $vdCO_2 = 1,5$ -dimethyl-6-oxo-verdazyl-3-carboxylate)

Tosha M. Barclay, Robin G. Hicks,* Martin T. Lemaire, Laurence K. Thompson and Zhiqiang Xu

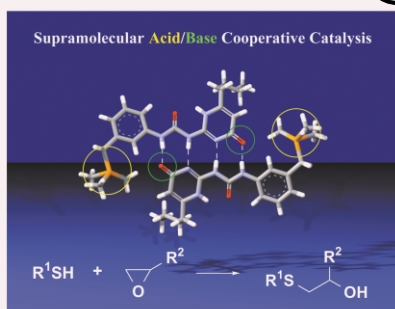


Appending a carboxylate group as a substituent to a stable verdazyl radical renders the resulting radical anion highly water soluble, enabling the aqueous synthesis of transition metal–verdazyl complexes such as the Ni(II) complex shown.

1690

Supramolecular acid/base catalysis via multiple hydrogen bonding interaction

Koji Ohsaki, Katsuaki Konishi* and Takuzo Aida*

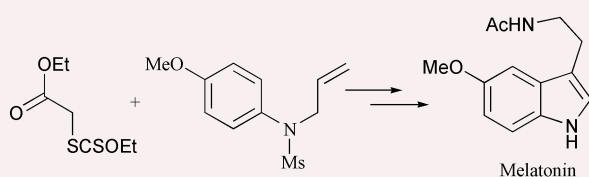


A novel cooperative acid/base catalysis was achieved by using a quadruply hydrogen-bonded dimer of a 2-ureidoisocytosine derivative with a phosphonium ion functionality.

1692

A convergent approach to 2-substituted-5-methoxyindoles. Application to the synthesis of melatonin

Béatrice Quiclet-Sire, Benôit Sortais* and Samir Z. Zard

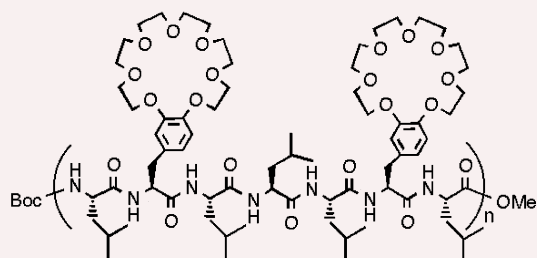


A convergent, radical based synthesis of 5-methoxyindoles including melatonin is described.

1694

Membrane disruption ability of facially amphiphilic helical peptides

Yvonne R. Vandenburg, Bradley D. Smith,* Eric Biron and Normand Voyer*

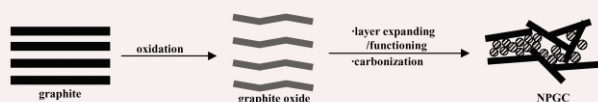


A helical 14-residue peptide containing four polar, but uncharged, benzo-21-crown-7 side-chains aligned along one face induces significantly more vesicle leakage than analogous 21-mer or 7-mer peptides.

1696

A novel nanoporous graphitic composite

Zheng-Ming Wang,* Kumiko Hoshino, M. Xue, Hirofumi Kanoh and Kenta Ooi

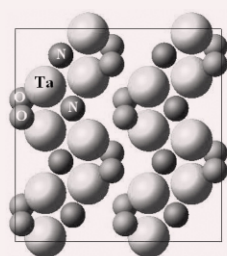
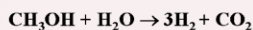
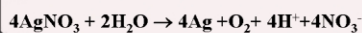


A novel nanoporous graphitic composite (NPGC) with very high surface area is synthesized by preliminarily expanding the interlayer of an oxidized product of graphite using surfactant, followed by Si bridging/pillaring and carbonization.

1698

An oxynitride, TaON, as an efficient water oxidation photocatalyst under visible light irradiation ($\lambda \leq 500$ nm)

Go Hitoki, Tsuyoshi Takata, Junko N. Kondo, Michikazu Hara, Hisayoshi Kobayashi and Kazunari Domen*

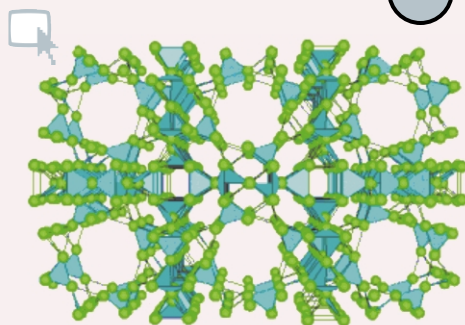
**TaON** $\lambda \leq 500$ nm

Under visible light irradiation ($\lambda = 420\text{--}500$ nm), TaON functions as a stable and very efficient photocatalyst for oxidation of water into O_2 with a sacrificial electron acceptor (Ag^+).

1700

Nanoporous zeolite film electrodes

Steve Kornic and Mark Baker*

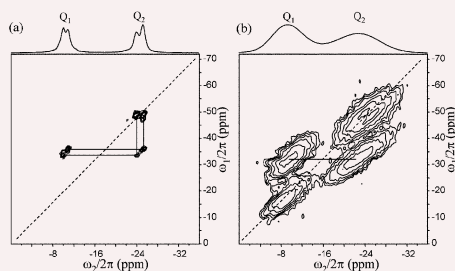


Oriented films of zeolite A with the {100} planes parallel to the substrate surface have been synthesized on tin oxide: the films are remarkably defect free offering a route to electrodeposition of nanostructured electroactive arrays.

1702

Through-bond phosphorus–phosphorus connectivities in crystalline and disordered phosphates by solid-state NMR

Franck Fayon,* Gwenn Le Saout, Lyndon Emsley and Dominique Massiot



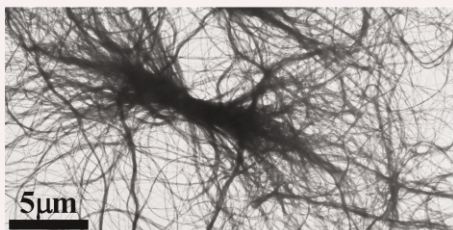
2D ^{31}P refocused INADEQUATE NMR experiments have been used to determine through-bond P–O–P connectivities in crystalline and disordered phosphates.

1704

Synthesis of single crystal BaWO₄ nanowires in cationic reverse micelles

Hongtao Shi, Limin Qi,* Jiming Ma and Humin Cheng

High aspect-ratio, single crystal BaWO₄ nanowires with diameters as small as 3.5 nm and lengths up to more than 50 μm were synthesized in a unique cationic reverse micelle system.

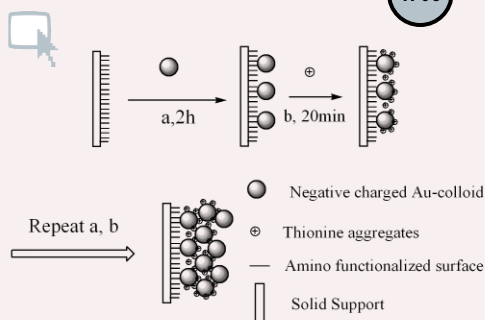


1706

Alternate assemblies of thionine and Au-nanoparticles on an amino functionalized surface

Wenlong Cheng, Janguang Jiang, Shaojun Dong* and Erkang Wang*

Photoactive and electroactive thionine dyes have been incorporated in high-surface-area surface-confined Au-nanoparticle superstructures by virtue of layer-by-layer deposition techniques. Electron, photon and proton accessibility could lead to applications in sensor and solar cells.

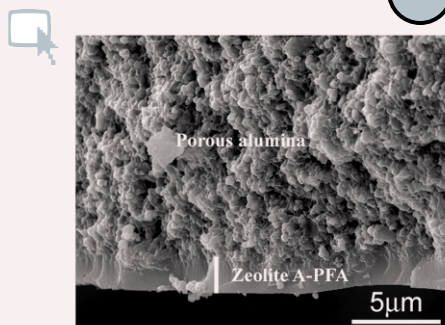


1708

Nanostructured zeolite 4A molecular sieving air separation membranes

Huanting Wang, Limin Huang, Brett A. Holmberg and Yushan Yan*

A novel membrane forming strategy is reported to probe the intrinsic O₂/N₂ selectivity of zeolite 4A membrane and to fabricate highly selective nanocomposite membranes.

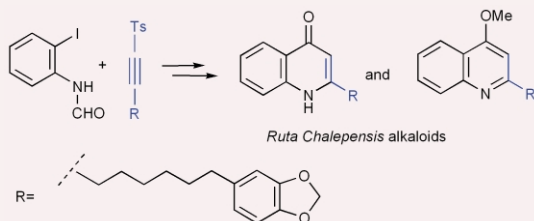


1710

First syntheses of two quinoline alkaloids from the medicinal herb *Ruta chalepensis* via cyclization of an *o*-iodoaniline with an acetylenic sulfone

Thomas G. Back* and Jeremy E. Wulff

The first syntheses of the two indicated alkaloids are reported.

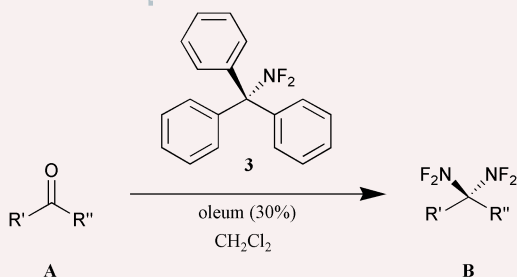


1712

Triphenylmethyldifluoramine: a stable reagent for the synthesis of gem-bis(difluoramines)

G. K. Surya Prakash,* Markus Etzkorn, George A. Olah,* Karl O. Christe, Stefan Schneider and Ashwani Vij

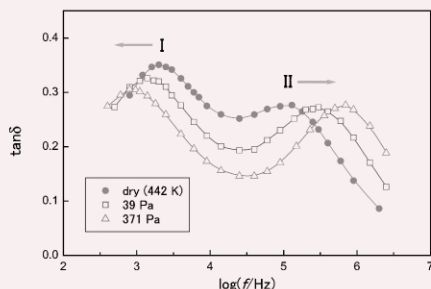
The conversion of ketones into geminal bis(difluoramines) can be achieved under mild two-phase reaction conditions by employing triphenylmethyldifluoramine as an *in situ* source of difluoramine.



1714

Unusual hydration behavior of dielectric loss in KA zeolite

Tatsuo Ohgushi* and Kazushi Ishimaru



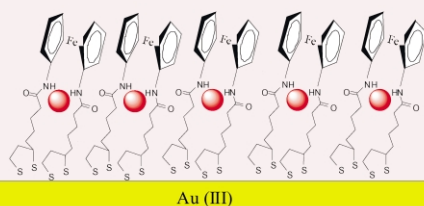
The shift to higher frequency of relaxation II with hydration indicates that the motion related to relaxation II is made more mobile by hydration whereas the shift to lower frequency of relaxation I means that the motion related to relaxation I is made less mobile. Such simultaneous and opposite changes in hydration behavior of relaxation have not been reported previously.

1716

Anion recognition and redox sensing amplification by self-assembled monolayers of 1,1'-bis(alkyl-N-amido)ferrocene

Paul D. Beer,* Jason J. Davis,* Daniel A. Drillsma-Milgrom and Fridrich Szemes

Surface pre-organisation within robust amidoferrocene self-assembled monolayers can be exploited in the selective electrochemical sensing of anions in both organic and aqueous media.

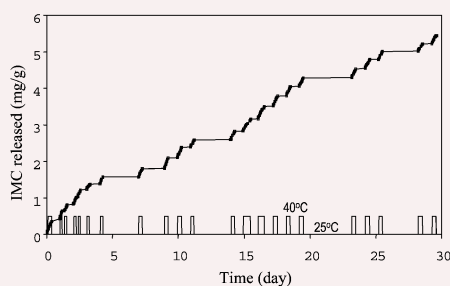


1718

Sustained drug release on temperature-responsive poly(*N*-isopropylacrylamide)-integrated hydroxyapatite

Yongsoon Shin,* Jun Liu, Jeong Ho Chang and Gragory J. Exarhos

A sustained positive thermo-responsive drug release profile has been observed on poly(*N*-isopropylacrylamide)-integrated hydroxyapatite.

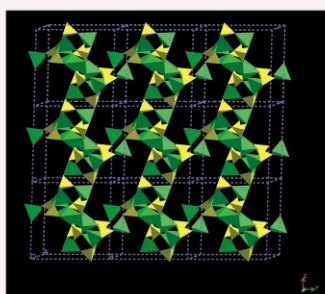


1720

Combinatorial approach for the hydrothermal syntheses of open-framework zinc phosphates

Yu Song, Jihong Yu,* Guanghua Li, Yi Li, Yu Wang and Ruren Xu*

Applying a combinatorial strategy, new zinc phosphates with interesting framework architectures have been hydrothermally synthesized and their structures solved by single-crystal X-ray diffraction analysis.

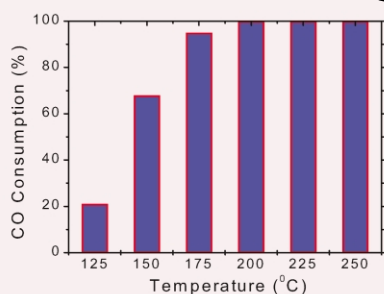


1722

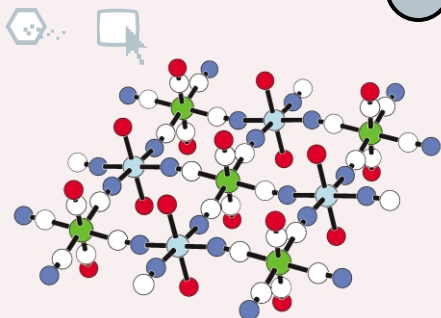
Synthesis of open-ended MoS₂ nanotubes and the application as the catalyst of methanation

Jun Chen,* Suo-Long Li, Qiang Xu and Koji Tanaka

Open-ended MoS₂ nanotubes, synthesized by a gas–solid reaction at relatively low temperatures, were used as a highly effective catalyst for methanation of carbon monoxide with hydrogen.



1724

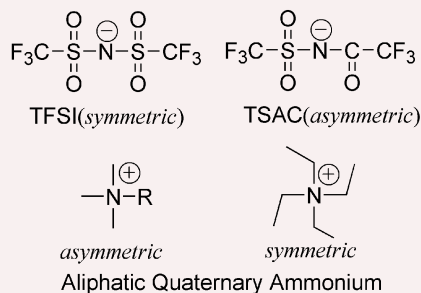


Two-dimensional materials based on *trans*-[Fe^{II}(CN)₄(CO)₂]²⁻ building blocks; first structural evidence for a hydrated metal carbonyl ligation

Jianfeng Jiang and Stephen A. Koch*

A series of 2-dimensional cyano-bridged structures using *trans*-[Fe^{II}(CN)₄(CO)₂]²⁻ as the building blocks were characterized; included is the first example of a hydrated metal carbonyl ligation, a feature which had not been previously seen in 25000 metal-carbonyl structures.

1726

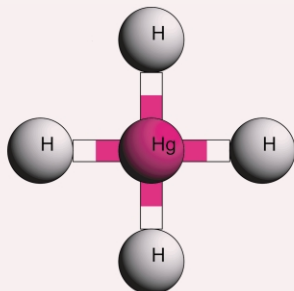


Room temperature ionic liquids based on small aliphatic ammonium cations and asymmetric amide anions

Hajime Matsumoto,* Hiroyuki Kageyama and Yoshinori Miyazaki

Asymmetric fluorinated anion (TSAC) has an excellent ability to form room temperature ionic liquid (RTIL) with small aliphatic quaternary ammonium cations which cannot form RTILs with TFSI anions.

1728

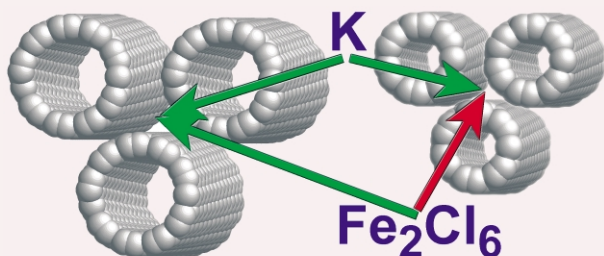


HgH₄ and HgH₆: further candidates for high-valent mercury compounds

Pekka Pyykkö, Michal Straka and Michael Patzschke

Mercury tetrahydride (*D*_{4h}) is calculated to have similar bond lengths and vibrational frequencies as the already known HgH₂ and to lie energetically 200 kJ mol⁻¹ above HgH₂ + H₂, in a local well, about 40 kJ mol⁻¹ below a transition state.

1730

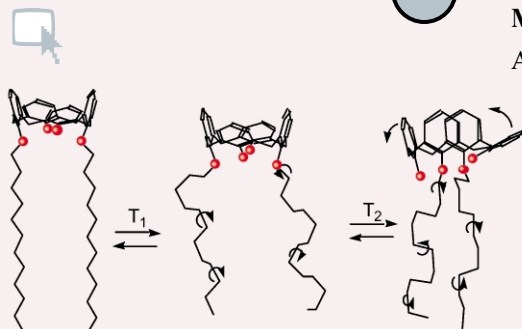


Diameter selective charge transfer in p- and n-doped single wall carbon nanotubes synthesized by the HiPCO method

A. Kukovecz,* T. Pichler, R. Pfeiffer and H. Kuzmany

Experimental evidence for the diameter selectivity of carbon nanotube doping is presented for the first time using a wide diameter distribution HiPCO sample and different dopant molecule sizes.

1732



Multi-temporal self-organizations in 1,3-*O'*-bis(dodecyl)calix[4]arene

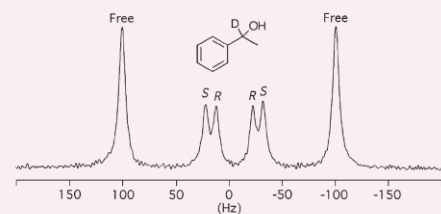
Alexander D. Q. Li,* Manuel Marquez and Mingming Guo

After heat erases the order in 1,3-*O'*-bis(dodecyl)calix[4]arene, it self-organizes the phenyl units into a rigid calix bowl first at *T*₂ = 111 °C, followed by the formation of all-*trans* alkyl chains at *T*₁ = 62 °C, which eventually yields a stable cone-shaped structure at room temperature.

1734

Monitoring the differential ordering of enantiomers included into cyclodextrins through deuterium NMR in lyotropic liquid crystals

Jean-Marie Péchiné, Abdelkrim Meddour and Jacques Courtieu*

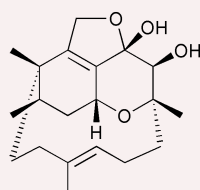


It is shown that enantiomers included in β -cyclodextrins are oriented differently; consequently, the order sensitive quadrupolar splittings are different and allow visualisation of separate quadrupolar doublets for encaged deuterated enantiomers using deuterium NMR in a nematic liquid crystal solvent.

1736

A total synthesis of phomactin A

William P. D. Goldring and Gerald Pattenden*



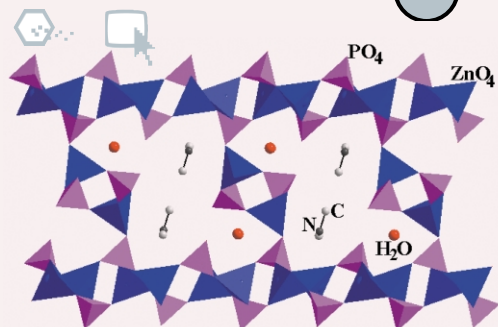
phomactin A

A total synthesis of phomactin A based on a Cr(II)/Ni(II) macrocyclisation, followed by a biogenetically patterned elaboration of the reduced furanochroman unit in the natural product, is described.

1738

Synthesis of open-framework zinc phosphates from organophosphorus amides

S. Neeraj and A. K. Cheetham*

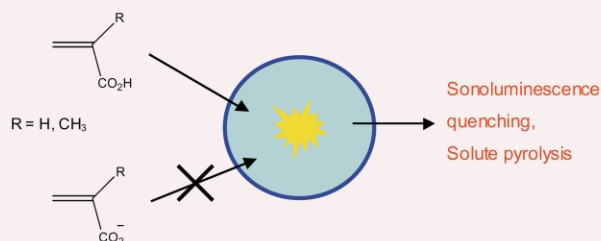


Open-framework zinc phosphates are typically made in the presence of amines and phosphoric acid. However, novel architectures can be created by using organophosphorus amides as a single source of amine and phosphorus.

1740

Sonoluminescence quenching by organic acids in aqueous solution: pH and frequency effects

Gareth J. Price,* Muthupandian Ashokkumar, Timothy D. Cowan and Franz Grieser

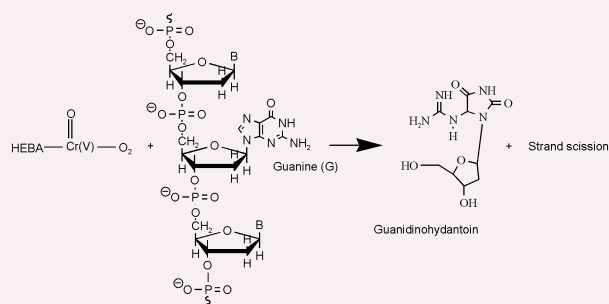


Comparison of sonoluminescence quenching results for two unsaturated organic acids in aqueous solution using ultrasound at 20 or 515 kHz indicate that there is a frequency dependence of the cavitation mechanism and also a dependence on pH.

1742

DNA oxidation by peroxo-chromium(v) species: oxidation of guanosine to guanidinohydantoin

Lamis Joudah, Shadi Moghaddas and Rathindra N. Bose*



At physiological pH, double stranded DNA was cleaved by a peroxo(oxo)chromium(v)–HEBA complex in which guanosine was oxidized to guanidinohydantoin, a four-electron oxidation product, and Cr(v) was reduced to Cr(III) species.

1744



Preparation of 2,4-bis(2,4,6-tri-*tert*-butylphenyl)-1,3-diphosphacyclobutenes from 2-(2,4,6-tri-*tert*-butylphenyl)-1-phosphaethyne and alkyllithiums

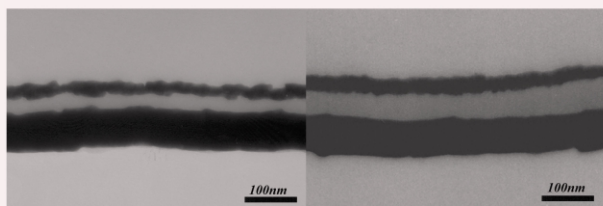
Shigekazu Ito, Hiroki Sugiyama and Masaaki Yoshifuji*

Reaction of a bulky phosphalkyne [Mes**C*≡P] with 0.5 eq. of alkyllithium afforded a 1,3-diphosphacyclobutene derivative, which might include a 1,3-diphosphabuta-1,3-diene intermediate.

1746

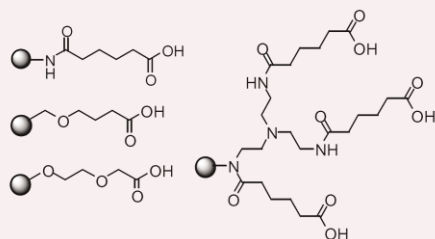
Direct visualization of layer-by-layer self-assembled multilayers of organometallic polymers

John Halfyard, Josie Galloro, Madlen Ginzburg, Zhuo Wang, Neil Coombs, Ian Manners* and Geoffrey A. Ozin*



Direct visualization of organometallic-organic and novel all-organometallic multilayer superlattices prepared by layer-by-layer assembly of cationic/anionic polyferrocenylsilane and anionic polystyrene sulfonate polyelectrolytes using a gold coating/TEM technique is reported.

1748



Development of new acid-functionalized resins for combinatorial synthesis on solid supports

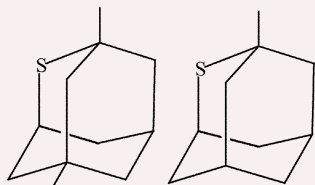
Frank Stieber and Herbert Waldmann*

New methods for the synthesis of acid-functionalized polystyrene and TentaGel resins are described. These methods serve to overcome problems with currently available resins and will be instrumental in spurring the use of carboxylic acid resins in solid phase chemistry.

1750

Bridgehead alkylated 2-thiaadamantanes: novel markers for sulfurisation processes occurring under high thermal stress in deep petroleum reservoirs

Sylvie Hanin, Pierre Adam, Isabelle Kowalewski, Alain-Yves Huc, Bernard Carpentier and Pierre Albrecht*



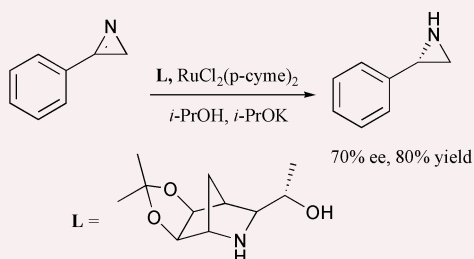
Two bridgehead-alkylated 2-thiaadamantanes (1,5-dimethyl and 1-methyl) have been identified in petroleum; these compounds give clues to sulfurisation processes affecting petroleum which has undergone high thermal stress.

1752

Asymmetric reduction of azirines; a new route to chiral aziridines

Peter Roth, Pher G. Andersson* and Peter Somfai*

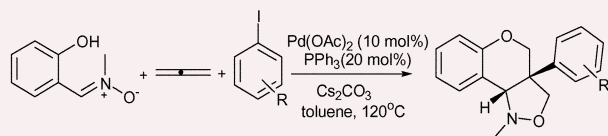
The first enantioselective reduction to give an aziridine.



1754

Novel synthesis of fused isoxazolidines *via* a palladium catalysed allene insertion–intramolecular 1,3-dipolar cycloaddition cascade reaction

Tajassab Aftab, Ronald Grigg,* Mark Ladlow, Visuvanathar Sridharan and Mark Thornton-Pett

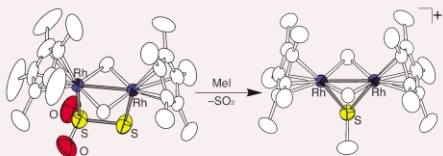


Novel synthesis of fused isoxazolidines *via* a palladium catalysed allene insertion–intramolecular 1,3-dipolar cycloaddition cascade reaction.

1756

Structure and reactivity of a novel parallel thiosulfite (SSO₂-S:S') rhodium dinuclear complex

Kimie Shiomi, Brian K. Breedlove,* Hiroaki Kitayama, Takanori Nishioka,* Isamu Kinoshita, Nobuaki Koga and Kiyoshi Isobe

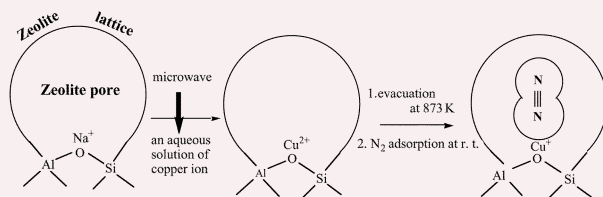


The thiosulfite ligand in a rhodium complex, which is formed by oxygenation of a bridging disulfide, reacts with hydrocarbyl halides to afford a bridging hydrocarbyl thiolate ligand and sulfur dioxide.

1758

Microwave-assisted simple ion-exchange of ZSM-5-type zeolites with copper ions and their specific adsorption properties for N₂ molecules at room temperature

Yasushige Kuroda,* Takae Okamoto, Ryotaro Kumashiro, Yuzo Yoshikawa and Mahiko Nagao

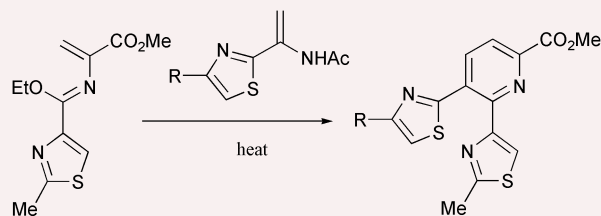


Copper ion-exchanged ZSM-5 samples, prepared using an easy method that takes advantage of microwaves, exhibit a quite peculiar adsorption feature for dinitrogen molecules, in that a large volume of chemisorbed N₂ was detected, even at room temperature.

1760

Biosynthesis inspired Diels–Alder route to pyridines: synthesis of the 2,3-dithiazolylpyridine core of the thiopeptide antibiotics

Christopher J. Moody,* Rachael A. Hughes, Stewart P. Thompson and Lilian Alcaraz

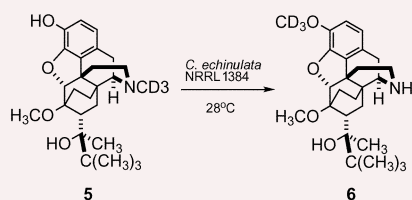


Reaction of 1-alkoxy-2-azadienes with dehydroalanine derived dienophiles results in Diels–Alder reaction and aromatisation to give 2,3,6-trisubstituted pyridines, thereby establishing the viability of the proposed biosynthetic route to the pyridine ring of the thiopeptide antibiotics.

1762

A novel regiospecific *N* to *O*-methyl transferase activity in the biotransformation of a thebaine derivative with *Cunninghamella echinulata* NRRL 1384

Anthony M. Abel, Graham R. Allan, Andrew J. Carnell* and J. Alf Davis

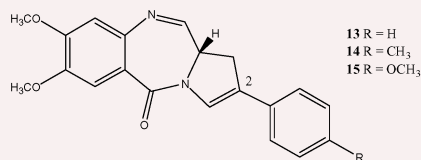


Biotransformation of the *N*-CD₃ thebaine derivative **5** with *Cunninghamella echinulata* NRRL 1384 resulted in *N*- to *O*-methyl transfer giving the OCD₃ derivative **6** in 65% yield.

1764

Synthesis of novel C2-aryl pyrrolobenzodiazepines (PBDs) as potential antitumour agents

Nectaroula Cooper, David R. Hagan, Arnaud Tiberghien, Temitope Ademefun, Charles S. Matthews, Philip W. Howard* and David E. Thurston*

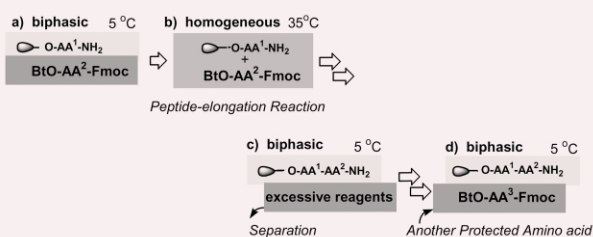


A new concise synthesis of three novel C2-aryl pyrrolobenzodiazepines (PBDs) has been accomplished utilising Suzuki–Miyaura coupling at room temperature. The C2-aryl PBDs are potent antiproliferative agents with a degree of selectivity for melanoma and ovarian cell lines.

1766

A liquid-phase peptide synthesis in cyclohexane-based biphasic thermomorphic systems

Kazuhiro Chiba,* Yusuke Kono, Shokaku Kim, Kohsuke Nishimoto, Yoshikazu Kitano and Masahiro Tada

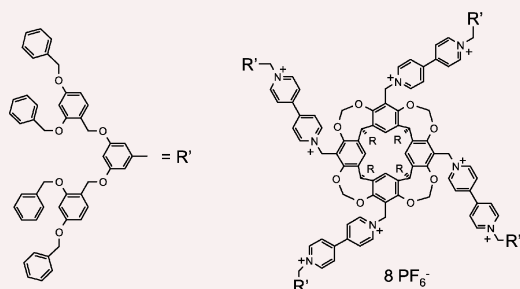


Combinations of typical organic solvents composed of cyclohexane and qualified aprotic polar organic solvents were found to realize an effective, biphasic thermomorphic system in arbitrary ratios of upper and lower phases that enable a practical application of a liquid-phase peptide synthesis.

1768

Dendritic cavitands: preparation and electrochemical properties

Rosa Toba, José María Quintela, Carlos Peinador,* Esteban Román and Angel E. Kaifer*

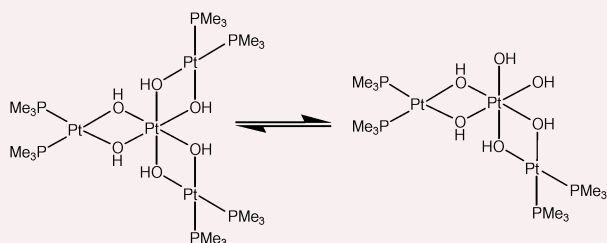


Preparation, characterization and electrochemistry of a new series of Fréchet-type dendrimers containing a cavitand core and four viologen subunits.

1770

Isolation of a new mixed valence Pt molecular oxide using phosphine as protecting group

K. Noro, Y. Ozawa,* M. Taguchi and A. Yagasaki*

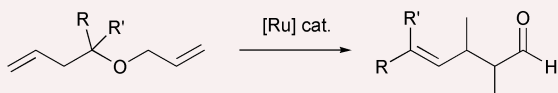


A novel tetranuclear mixed valence cationic Pt molecular oxide $[(\text{Me}_3\text{P})_2\text{Pt}]_3\text{Pt}(\text{OH})_6]^{4+}$ is obtained by reacting $\text{H}_2\text{Pt}(\text{OH})_6$ and $(\text{Me}_3\text{P})_2\text{Pt}^{2+}$, whose NMR spectra suggest the existence of another species in solution.

1772

Tandem isomerization/Claisen transformation of allyl homoallyl and diallyl ethers into γ,δ -unsaturated aldehydes with a new three component catalyst $\text{Ru}_3(\text{CO})_{12}$ /imidazolium salt/ Cs_2CO_3

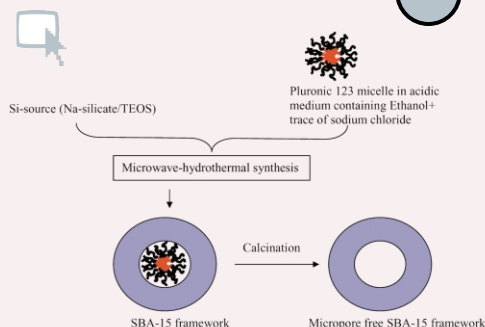
Jérôme Le Nôtre, Luc Brissieux, David Sémeril, Christian Bruneau and Pierre H. Dixneuf*



Cascade reactions: isomerization/Claisen rearrangement catalyzed by a three-component *in situ* generated ruthenium catalyst.

$\text{Ru}_3(\text{CO})_{12}$ / 1,3-bis(2,6-diisopropylphenyl)imidazolium chloride/ Cs_2CO_3

1774

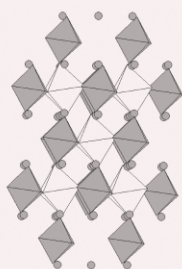


Simplified synthesis of micropore-free mesoporous silica, SBA-15, under microwave-hydrothermal conditions

Bharat L. Newalkar and Sridhar Komarneni

A simplified rapid synthesis approach to obtain micropore-free SBA-15 framework under microwave-hydrothermal conditions.

1776

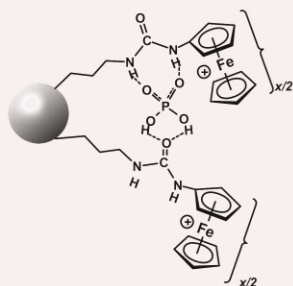


La₂MgGeO₆: a novel Ge based perovskite synthesised under ambient pressure

Mark Swaffer, Peter R. Slater,* Richard K. B. Gover, Tadaaki Matsumura, Ryoji Kanno and Takashi Kamiyama

The structure of La₂MgGeO₆: the first example of a Ge based perovskite-type phase synthesised under ambient pressure.

1778

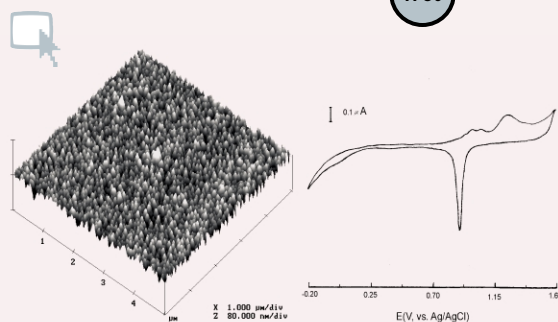


Effective recognition of H₂PO₄⁻ by a new series of dendrimers functionalized with ferrocenyl-urea termini

Beatriz Alonso, Carmen M. Casado, Isabel Cuadrado,* Moisés Morán and Angel E. Kaifer*

A new series of dendrimers with poly(propylene imine) backbones and 4, 8, 16 and 32 peripheral ferrocenyl-urea groups were synthesized and their electrochemical behavior in DMSO solution was shown to be very sensitive to hydrogenphosphate anion.

1780

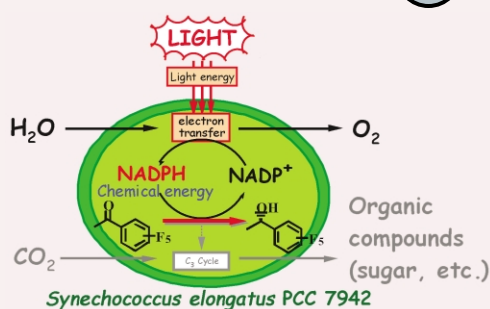


Fabrication of Au(111) single-crystal nanoisland-arrayed electrode ensembles by template-directed seeding growth

Yongdong Jin and Shaojun Dong*

A new and simple approach for preparation of Au(111) *single-crystal* nanoisland-arrayed electrode *ensembles*, based on fine colloidal Au monolayer-directed seeding growth, is reported.

1782



Light mediated cofactor recycling system in biocatalytic asymmetric reduction of ketone

Kaoru Nakamura* and Rio Yamanaka

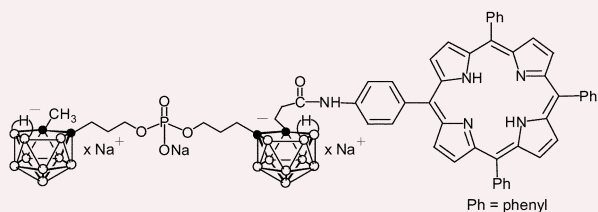
Reduction of an artificial ketone by *Synechococcus elongatus* PCC 7942 proceeds smoothly by the aid of light. The efficiency of the reaction is very high since the coenzyme NADPH is regenerated by using light energy.

1784

Synthesis of a porphyrin-labelled carboranyl phosphate diester: a potential new drug for boron neutron capture therapy of cancer

Andreas Maderna, Ramon Huertas, M. Frederick Hawthorne,*
Raymond Luguya and M. Graça H. Vicente*

Synthesis of a porphyrin-labelled carboranyl phosphate diester: a potential new drug for boron neutron capture therapy of cancer.

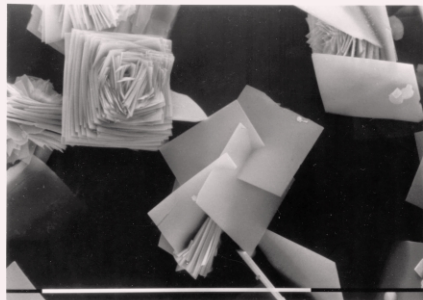


1786

A rapid method of synthesizing the layered titanosilicate JDF-L1

Stanislav Ferdov, Vladislav Kostov-Kytin* and Ognyan Petrov

A rapid procedure for synthesis of highly crystalline and pure samples of JDF-L1 without using organics as reactants or templates is described and indexation of the powder X-ray diffraction pattern of this phase is presented.

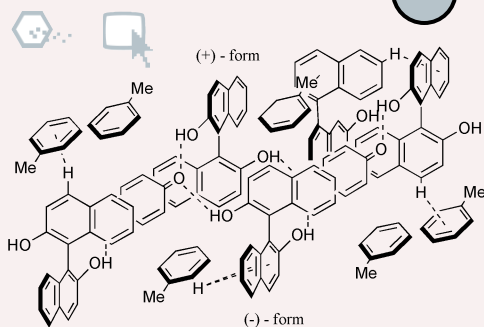


1788

A new supramolecular system of racemic-bis-β-naphthol, benzoquinone and aromatic hydrocarbon, which shows high molecular recognition ability

Fumio Toda,* Mami Senzaki and Reiko Kuroda*

A new supramolecular system of racemic-bis-β-naphthol, benzoquinone and aromatic hydrocarbon, which shows high molecular recognition ability.

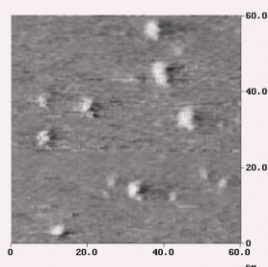


1790

High resolution imaging of functional group distributions on carbon surfaces by tapping mode atomic force microscopy

J. I. Paredes,* A. Martínez-Alonso and J. M. D. Tascón

STM image of atomic vacancies on graphite produced by oxygen plasma etching. The presence of oxygen groups on these defects is detected subsequently by phase contrast in noncontact tapping mode AFM.

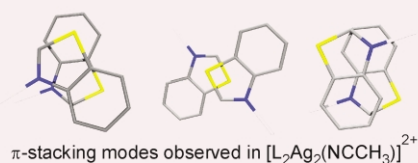


1792

1,5-Bis(benzothiazolyl)-3-thiapentane and its asymmetric dinuclear Ag(I) complex with three distinct intermolecular-stacking interactions

Craig A. Grapperhaus,* Ming Li and Mark S. Mashuta

Synthesis of a dibenzothiazole thioether ligand that coordinates Ag(I) yielding an asymmetric dinuclear complex with three unique intermolecular π -stacking interactions, which influence the first coordination spheres of the silver centers.



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BY M BERRY, C OSBORNE, A PEPPIN

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NOTE: An asterisk in the heading of each paper indicates the author who is to receive any correspondence.