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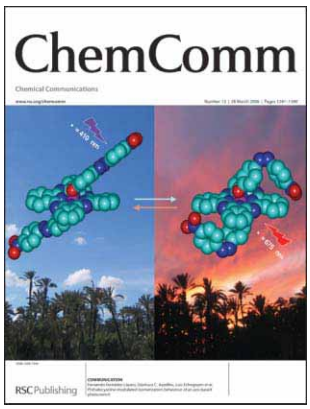
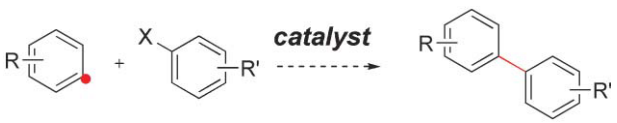
ISSN 1359-7345 CODEN CHCOFS (12) 1241–1340 (2006)

Cover
A schematic illustration of the assembled structural changes of liquid crystalline complexes based on a triphenylphosphine oxide from columnar simple stack to cubic and to columnar sandwich induced by metal cation–phosphine oxide interactions.
Image reproduced by permission of Tsukasa Hatano and Takashi Kato from *Chem. Commun.*, 2006, 1277.



Inside cover
View of a photoswitchable bis(azobenzene) silicon phthalocyanine triad over the Palm Grove of Elche, a UNESCO World Heritage Site, at both sunrise and sunset.
Image reproduced by permission of José L. Rodríguez-Redondo, Ángela Sastre-Santos, Fernando Fernández-Lázaro, Dilcelli Soares, Gianluca C. Azzellini, Bevan Elliott and Luis Echegoyen from *Chem. Commun.*, 2006, 1265.

FEATURE ARTICLE



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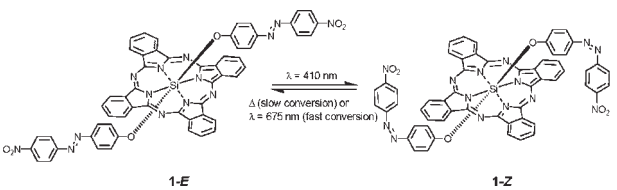

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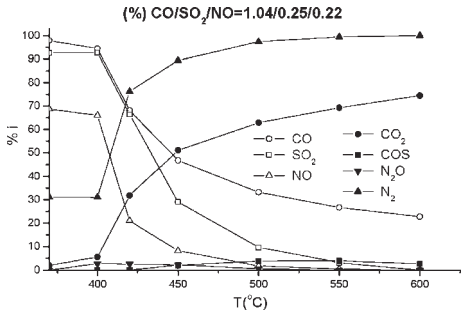
1268

Synthesis of highly loaded Cu/Ce mesoporous silica. Active catalyst for the simultaneous reduction of SO_2 and NO with CO

Constantinos C. Pantazis* and Philippos J. Pomonis

Highly loaded (15 wt.%) Cu/Ce mesoporous silica with high thermal stability and metal dispersion. This catalytic system was the first bimetallic mesoporous silica successfully tested for the simultaneous reduction of SO_2 and NO with CO.



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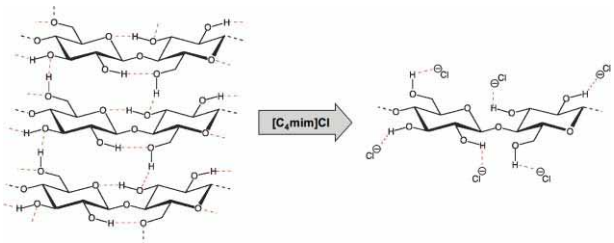
Mechanism of cellulose dissolution in the ionic liquid 1-*n*-butyl-3-methylimidazolium chloride: a ^{13}C and $^{35/37}Cl$ NMR relaxation study on model systems

Richard C. Remsing, Richard P. Swatloski, Robin D. Rogers* and Guillermo Moyna*

^{13}C and $^{35/37}Cl$ NMR relaxation measurements on several model systems demonstrate that the solvation of cellulose by the ionic liquid (IL) 1-*n*-butyl-3-methylimidazolium chloride ([C_4mim]Cl) involves hydrogen-bonding between the carbohydrate hydroxyl protons and the IL chloride ions in a 1 : 1 stoichiometry.



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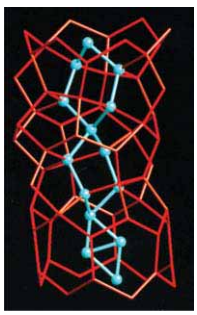
Structures and phase transition of multi-layered water nanotube confined to nanochannels

Makoto Tadokoro,* Syoko Fukui, Tadanori Kitajima, Yuki Nagao, Shin'ichi Ishimaru, Hiroshi Kitagawa, Kiyoshi Isobe and Kazuhiro Nakasuji

A huge water nano-cluster (water nano-tube) stabilized by a molecular porous crystal has a phase transition between condensation and fusion of water molecules inside the channels.

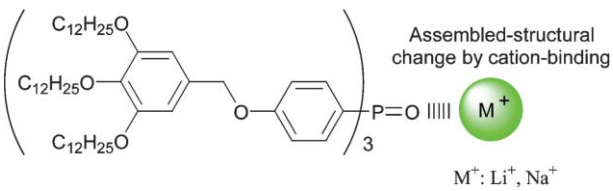


1277

A columnar liquid crystal based on triphenylphosphine oxide—its structural changes upon interaction with alkaline metal cations

Tsukasa Hatano and Takashi Kato*

A triphenylphosphine oxide (TPPO) compound bearing 3,4,5-tridodecyloxybenzyloxy moieties exhibits a columnar liquid crystalline phase, and by changing its self-assembled structure, is responsive to alkaline metal cations due to cation–phosphine oxide interactions.



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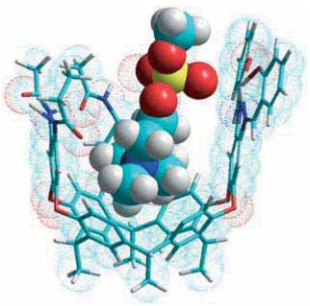
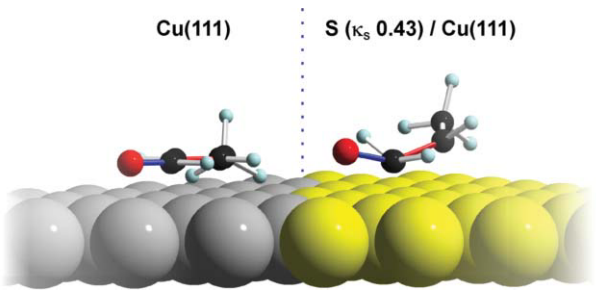


A synthetic receptor for phosphocholine esters

Felix H. Zelder, Riccardo Salvio and Julius Rebek Jr.*

A bifunctional Zn-salen modified cavitand, reminiscent of the enzyme phospholipase C, shows high efficiency and synergic effect in the binding of the phospholipid DOPC.

1283

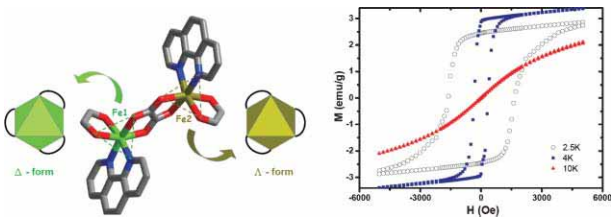


Sulfur, normally a poison, strongly promotes chemoselective catalytic hydrogenation: stereochemistry and reactivity of crotonaldehyde on clean and S-modified Cu(111)

May E. Chiu, Georgios Kyriakou, Federico J. Williams, David J. Watson, Mintcho S. Tikhov and Richard M. Lambert*

Sulfur adatoms strongly activate the otherwise inert Cu(111) surface towards chemoselective hydrogenation of crotonaldehyde by electronically perturbing and strongly tilting the reactant.

1286

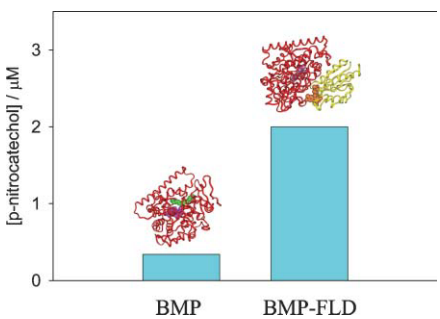


A coordination π–π framework exhibits spontaneous magnetization

Lu-Lin Li, Kuan-Jiuh Lin,* Chin-Jun Ho, Chia-Pin Sun and Hung-Duen Yang*

A π–π scaffolding framework comprising alternating Δ- and Λ-iron(II) chiral building units, $[Fe^{II}(\Delta)Fe^{II}(\Lambda)(ox)_2(phen)_2]_n$, reveals spontaneous magnetization that gives rise to pronounced hysteresis loops below 10 K.

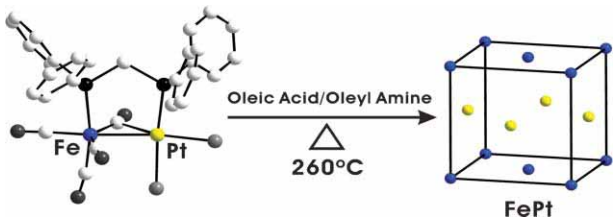
1289

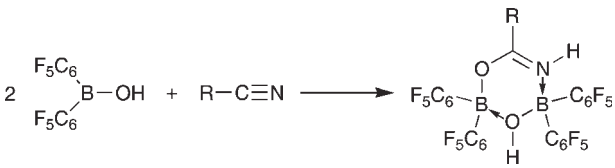


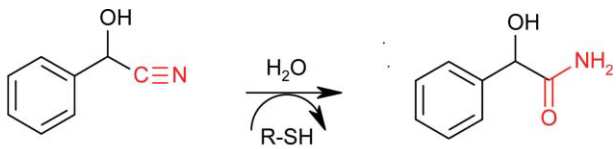
Improving catalytic properties of P450 BM3 haem domain electrodes by molecular Lego

Andrea Fantuzzi, Yergalem T. Meharenna, Paul B. Briscoe, Carlo Sassone, Beatrice Borgia and Gianfranco Gilardi*

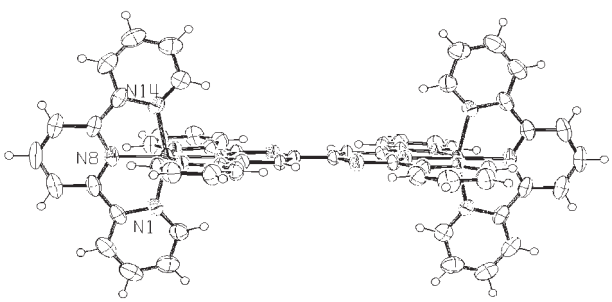
The communication shows how the catalytic properties of cytochrome P450 BM3 immobilised onto an electrode surface are improved by means of the molecular Lego approach. The P450 activity is measured in terms of the amount of *p*-nitrocatechol product formed. When the P450 catalytic module is linked to flavodoxin a 6-fold improvement is demonstrated.







R =Nitrilase or 1,4-Dithio-DL-threitol (DTT)



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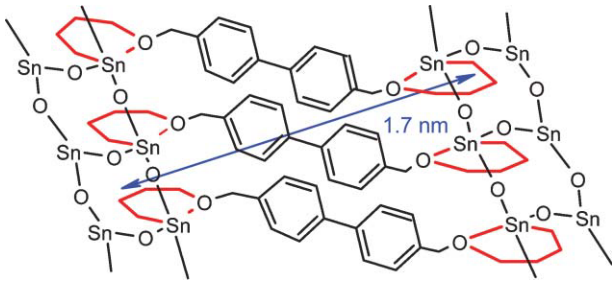
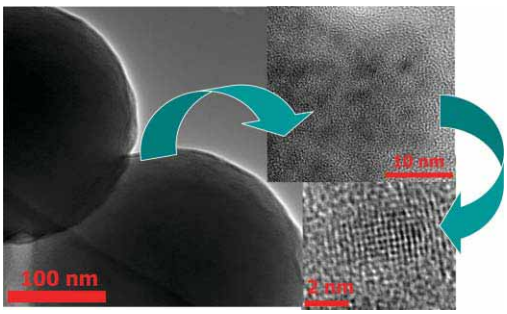


A doubly folded spacer in a self-assembled hybrid material

Hicham Elhamzaoui, Bernard Jousseaume,*
Thierry Toupance, Cécile Zakri, Monique Biesemans, Rudolph Willem and Hassan Allouchi

The hydrolysis of a bridged α,ω-bis(trialkynylstannylated) compound leads to a hybrid material ordered by self-assembly where the spacer forms two six-membered [1,2]oxastanninane rings by intramolecular coordination.

1307

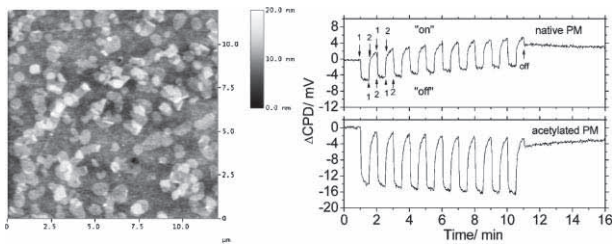


TEMPO-mediated, room temperature synthesis of pure CoO nanoparticles

Anna Lagunas, Antoni Mairata i Payeras, Ciril Jimeno and Miquel A. Pericàs*

Monodisperse CoO nanoparticles (*ca.* 3.0 nm diameter) can be prepared at room temperature by TEMPO-mediated decarbonylation of dicobalt octacarbonyl. Controlled aggregation of the nanoparticles can be used for the preparation of hybrid materials.

1310

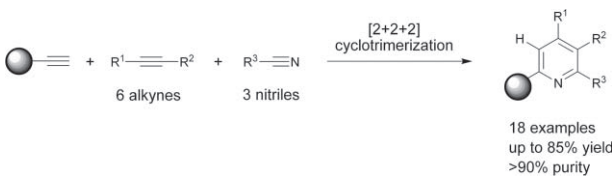


Chemically induced enhancement of the opto-electronic response of *Halobacterium* purple membrane monolayer

Yongdong Jin, Noga Friedman, David Cahen* and Mordechai Sheves*

Monolayers of the bacteriorhodopsin-containing purple membrane (PM) on a substrate show a significantly enhanced photovoltage after PM acetylation, probably due to an improved orientation of the PM on the surface.

1313



Pyridines *via* solid-supported [2 + 2 + 2] cyclotrimerization

Ramesh S. Senaiar, Douglas D. Young and Alexander Deiters*

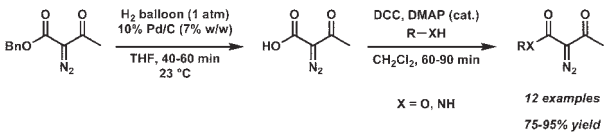
The cobalt-catalyzed [2 + 2 + 2] cyclotrimerization of two alkynes and a nitrile was conducted on a solid-support. This represents the first selective crossed pyridine formation using two different alkynes.

1316

2-Diazoacetoacetic acid, an efficient and convenient reagent for the synthesis of α-diazo-β-ketoesters

Michael E. Meyer, Eric M. Ferreira and Brian M. Stoltz*

The formation of various α-diazo acetoacetic esters can be obtained in a single transformation with good to excellent yields using readily available 2-diazoacetoacetic acid.

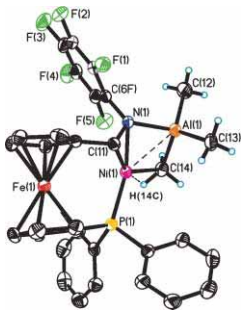


1319

A structurally characterized Ni–Al methyl-bridged complex with catalytic ethylene oligomerization activity

Zhiqiang Weng, Shihui Teo, Lip Lin Koh and T. S. Andy Hor*

A bimetallic Ni–Al (2.5087(15) Å) complex $[\eta\text{-}C_5H_4CH{=}N(C_6F_5)]Fe[\eta\text{-}C_5H_4PPh_2]Ni(AlMe_3)$ that mimics the active intermediate in the ''Ziegler Nickel Effect'' has been isolated and crystallographically established. It is active towards ethylene oligomerization under moderate conditions.

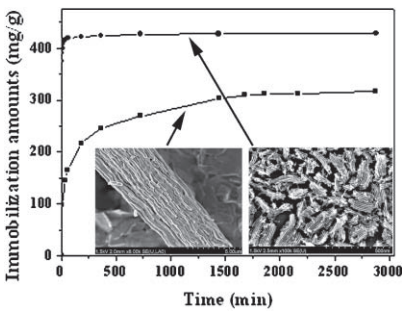


1322

Ultrafast enzyme immobilization over large-pore nanoscale mesoporous silica particles

Junming Sun, He Zhang, Ruijun Tian, Ding Ma,* Xinhe Bao,* Dang Sheng Su and Hanfa Zou

Nanoscale silica particles with ordered large mesopores (~13 nm) have an unusual ultrafast biomolecule adsorption speed, and the amount of enzyme that can be immobilized is larger than that of conventional mesoporous silica, which has potential applications in the fast separation of biomolecules.



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Selective catalytic activity of ball-shaped Pd@MCM-48 nanocatalysts

Hee-Yoon Lee,* Suyoung Ryu, Hongkyu Kang, Young-wook Jun and Jinwoo Cheon*

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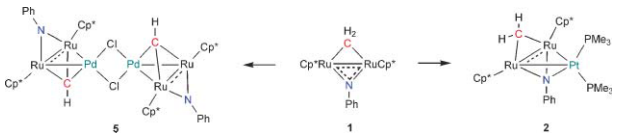
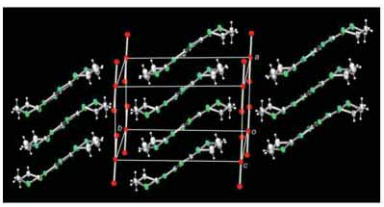


Synthesis of Ru–Pt and Ru–Pd mixed-metal imido clusters from a diruthenium imido-methylene scaffold $[(Cp^*Ru)_2(\mu_2\text{-}NPh)(\mu_2\text{-}CH_2)]$

Shin Takemoto, Hidenobu Morita, Ken Kamikawa and Hiroyuki Matsuzaka*

The diruthenium complex **1** serves as a bifunctional scaffold for cluster synthesis, producing a μ_3-imido Ru_2Pt cluster on treatment with a Pt(0) complex and a μ_3-methylidyne Ru_4Pd_2 cluster with a Pd(II) complex.



Pressure effect on the electrical conductivity and superconductivity of β-$(BDA\text{-}TTP)_2I_3$

Jun-ichi Yamada,* Kazuya Fujimoto, Hiroki Akutsu, Shin'ichi Nakatsuji, Akira Miyazaki, Masashi Aimatsu, Satoshi Kudo, Toshiaki Enoki and Koichi Kikuchi

Pressure application of up to 14 kbar dramatically changes the electrical conductivity behaviour of β-$(BDA\text{-}TTP)_2I_3$ and, simultaneously, induces superconductivity with an onset temperature of around 10 K.

ADDITION AND CORRECTION

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