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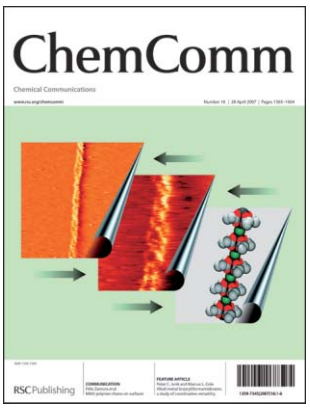
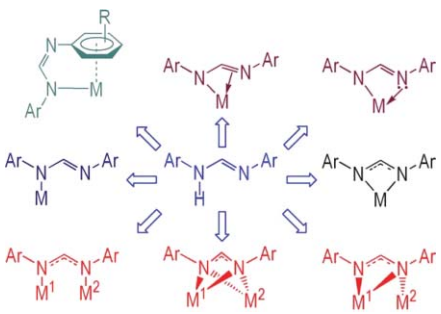


Cover

See Félix Zamora *et al.*, page 1591. The image shows a nanometric chain of an MMX polymer isolated on an HOPG surface, showing a helical internal structure. Image reproduced by permission of David Olea, Rodrigo González-Prieto, José L. Priego, M. Carmen Barral, Pedro J. de Pablo, M. Rosario Torres, Julio Gómez-Herrero, Reyes Jiménez-Aparicio and Félix Zamora, from *Chem. Commun.*, 2007, 1591.

FEATURE ARTICLE



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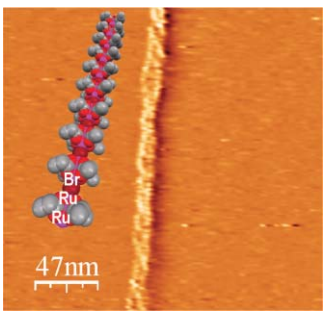

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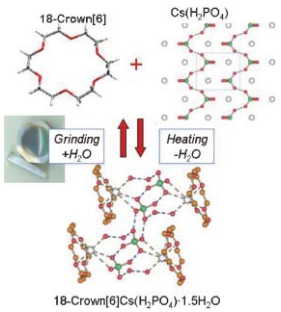
1594

Reversible solid-state reaction between 18-Crown[6] and $M[H_2PO_4]$ (M = K, Rb, Cs) and an investigation of the decomplexation process

Dario Braga,* Marco Polito, Elena Dichiarante, Katia Rubini and Fabrizia Grepioni*

Thermal dehydration of solid 18-Crown[6]·$M[H_2PO_4]$·xH_2O (x = 2 for M = K, Rb; x = 1.5 for M = Cs), prepared by mechanical mixing of 18-Crown[6] and $M[H_2PO_4]$, is accompanied by *extrusion* of the crown ether and reconstruction of $M[H_2PO_4]$. The mixture reverts to the starting complex upon grinding in air.

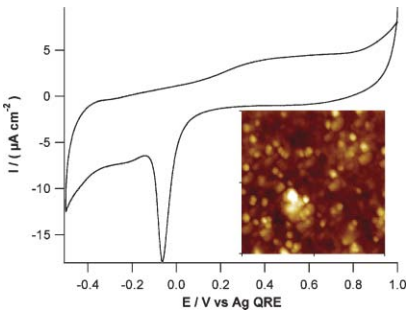


1597

Formation and evaluation of electrochemically-active ultra-thin palladium–Nafion nanocomposite films

Paolo Bertoncello,* Massimo Peruffo and Patrick R. Unwin*

A simple method for producing electrochemically-active palladium nanoparticles within ultra-thin Nafion films is described.

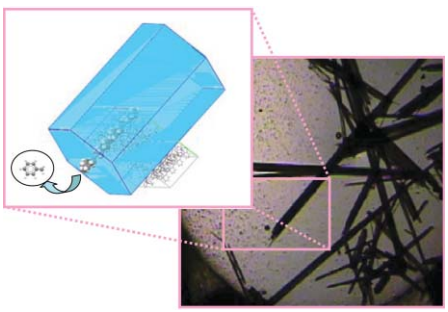


1600

Solvent inclusion in form II carbamazepine

Aurora J. Cruz Cabeza, Graeme M. Day, W. D. Samuel Motherwell and William Jones*

Experimental and theoretical evidence of solvent inclusion in form II carbamazepine is presented in this study. Once the inclusion properties were established, a long chain hydrocarbon was included in the crystal form leading to an isomorphic pseudopolymorph with improved physical stability.

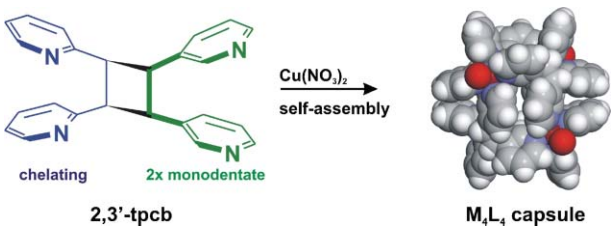


1603

Coding a coordination-driven self-assembly *via* a hydrogen bond-directed solid-state synthesis: An unexpected chiral tetrahedral capsule

Tamara D. Hamilton, Dejan-Krešimir Bučar and Leonard R. MacGillivray*

A hydrogen bond-directed organic synthesis has been used to code the formation of a chiral tetrahedral M_4L_4 capsule.

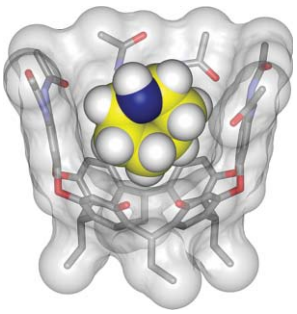


1605

A cavitand stabilizes the Meisenheimer complex of S_NAr reactions

Sara M. Butterfield and Julius Rebek, Jr.*

A deep cavitand binds amine nucleophiles and accelerates their subsequent S_NAr reactions by solvating the intermediate Meisenheimer complex.

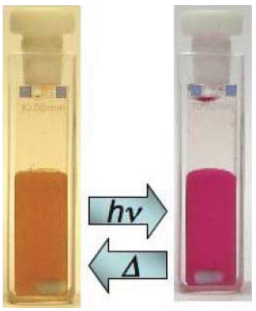


1608

Photochromism of 7-(*N,N*-diethylamino)-4′-hydroxyflavylium in a water–ionic liquid biphasic system

Fernando Pina,* A. Jorge Parola, Maria João Melo, César A. T. Laia and Carlos A. M. Afonso

Photochromism of *trans*-4-(*N,N*-diethylamino)-2,4′-dihydroxychalcone, with formation of the photoproduct 7-(*N,N*-diethylamino)-4′-hydroxyflavylium, is promoted in the ionic liquid phase of a water/[bmim][PF_6] biphasic system.

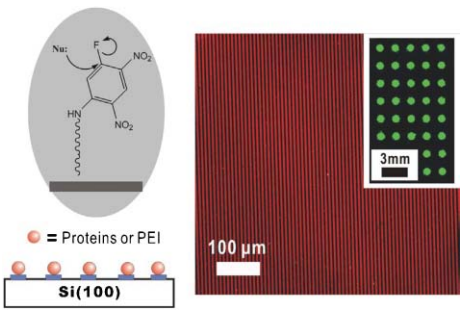


1611

Photoreactive immobilization of 11-(2,4-dinitro-5-fluorobenzene)undecenamide on a hydrogenated silicon (100) surface for protein immobilizations

Tai Hwan Ha,* Mi-ra Park, Hye Jung Park, Jae-Sik Choi, Guncheol Kim,* Moon Seop Hyun and Bong Hyun Chung*

Several nucleophiles such as proteins or poly(ethyleneimine) could be easily conjugated with a 11-(2,4-dinitro-5-fluorobenzene)undecenamide (DFUA) monolayer photochemically prepared on a silicon (100) surface.

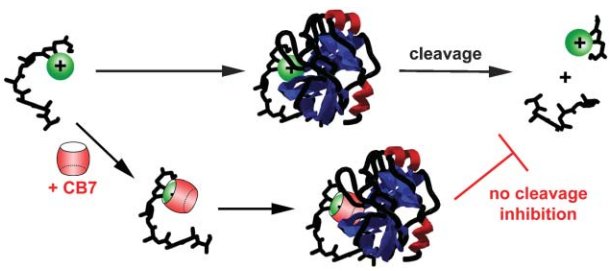


1614

Effects of cucurbit[7]uril on enzymatic activity

Andreas Hennig, Garima Ghale and Werner M. Nau*

The macrocyclic host cucurbit[7]uril exhibits highly specific inhibitory effects on the activity of proteases, which can be analyzed by a host-substrate complexation model. A preferential stabilization of substrates with cationic recognition sites was observed.



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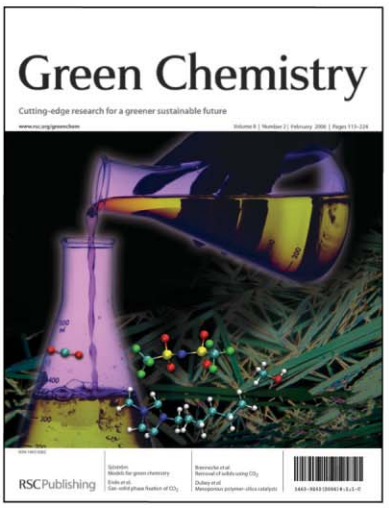

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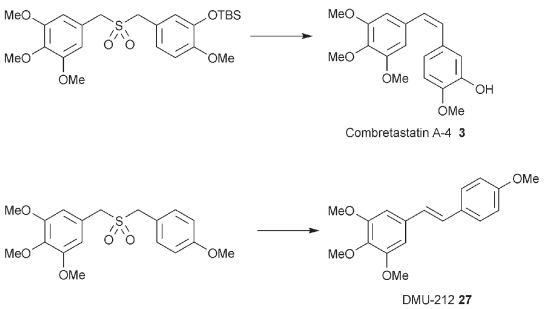
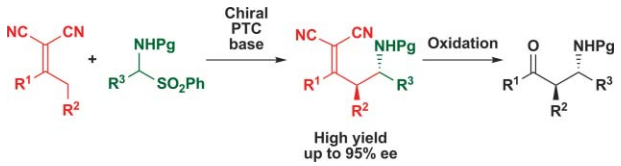
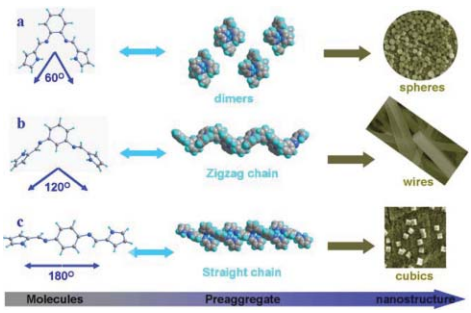
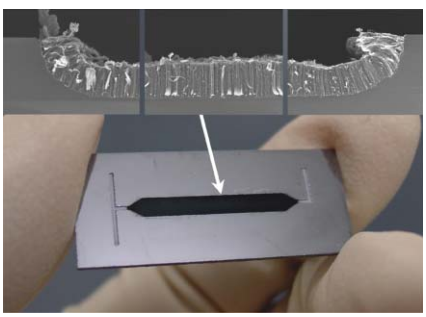






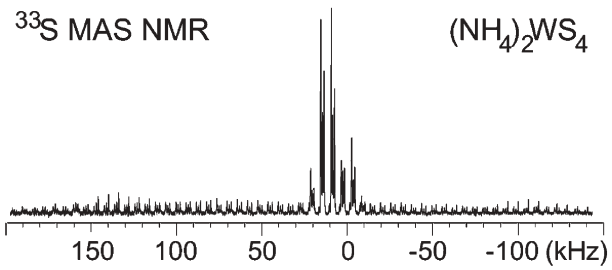


1629

Advancements in natural abundance solid-state ^{33}S MAS NMR: characterization of transition-metal M=S bonds in ammonium tetrathiometallates

Hans J. Jakobsen,* Anders R. Hove, Henrik Bildsøe, Jørgen Skibsted and Michael Brorson

Detection of ^{33}S satellite transitions in natural abundance ^{33}S MAS NMR has allowed determination of both ^{33}S chemical shift anisotropy and quadrupole coupling parameters for the tetrathiometallates $(NH_4)_2MS_4$ (M = Mo and W).

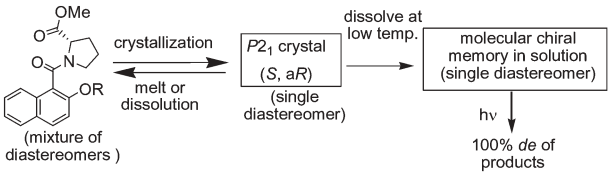


1632

Diastereoselective photocycloaddition using memory effect of molecular chirality controlled by crystallization

Masami Sakamoto,* Atsushi Unosawa, Shuichiro Kobaru, Yasuhiro Hasegawa, Takashi Mino, Yoshio Kasashima and Tsutomu Fujita

Naphthamides derived from L-proline, which exist as a mixture of several diastereomers in solution, converged to single diastereomer by crystallization, and the conformational transformation was controlled after the crystals were dissolved in the solvent at low temperature.

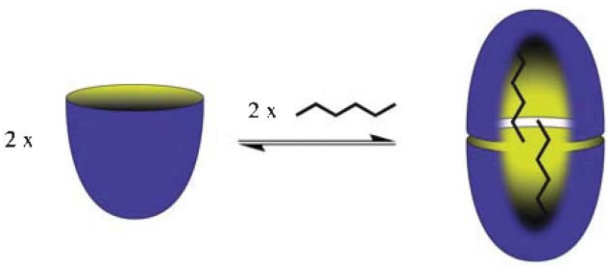


1635

Straight-chain alkanes template the assembly of water-soluble nano-capsules

Corinne L. D. Gibb and Bruce C. Gibb*

Small alkanes such as hexane form capsular, quaternary complexes with a water-soluble cavitand, while larger guest such as heptadecane form ternary (2 : 1) capsular complexes. Guests are tightly packed in the latter, reminiscent of the internal environment of proteins.

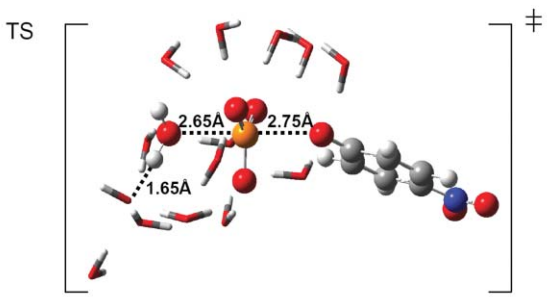


1638

Supermolecule density functional calculations suggest a key role for solvent in alkaline hydrolysis of *p*-nitrophenyl phosphate

Lidong Zhang, Daiqian Xie,* Dingguo Xu and Hua Guo*

Supermolecule density functional theory calculations show that solvent is responsible for the concerted transition state in alkaline hydrolysis of *p*-nitrophenyl phosphate suggested by heavy atom kinetic isotope effects.



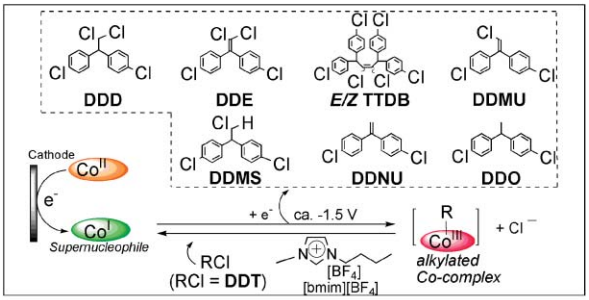
COMMUNICATIONS

1653

Enhanced reactivity of hydrophobic vitamin B_{12} towards the dechlorination of DDT in ionic liquid

Md. Abdul Jabbar, Hisashi Shimakoshi and Yoshio Hisaeda*

The electrolytic dechlorination of DDT and DDD with a cobalamin derivative in ionic liquid provided enhanced reactivity, and the recyclability of the catalyst is useful for developing ''green'' technologies.

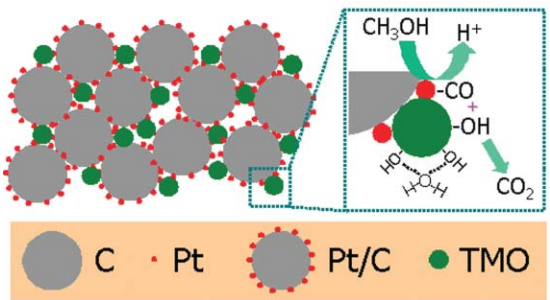


1656

Facile approach to enhance the Pt utilization and CO-tolerance of Pt/C catalysts by physically mixing with transition-metal oxide nanoparticles

Jingyu Xi, Jianshe Wang, Lihong Yu, Xinping Qiu* and Liquan Chen

A promising method to design the anode catalyst architecture for DAFCs by physically mixing Pt/C catalyst with transition-metal oxide nanoparticles is presented and electrochemical measurements confirm that this unique catalyst structure has excellent activity toward alcohol and CO electro-oxidation.

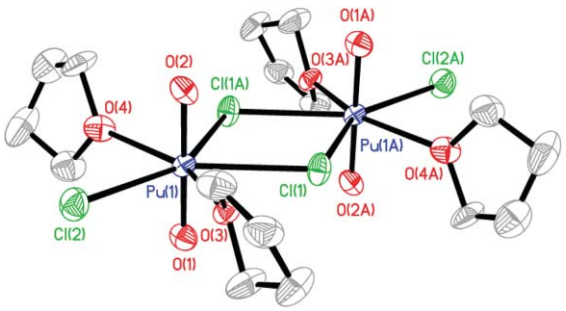


1659

An entry route into non-aqueous plutonyl coordination chemistry

Andrew J. Gaunt,* Sean D. Reilly, Trevor W. Hayton, Brian L. Scott and Mary P. Neu*

The Pu(VI) dimer $[PuO_2Cl_2(thf)_2]_2$ (**1**), was synthesized and characterized by dissolution of a thf suspension of PuO_2CO_3 by a solution of HCl in Et_2O; the isolated complex (**1**) allows unprecedented access for the exploration of non-aqueous plutonyl coordination chemistry under inert atmospheric environments.



ADDITION AND CORRECTION

1662

Photoinduced electron transfer in a Watson–Crick base-paired, 2-aminopurine:uracil-C_{60} hydrogen bonding conjugate

Francis D'Souza, Suresh Gadde, D.-M. Shafiqul Islam, Siew-Cheng Pang, Amy Lea Schumacher, Melvin E. Zandler, Rumiko Horie, Yasuyaki Araki and Osamu Ito

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