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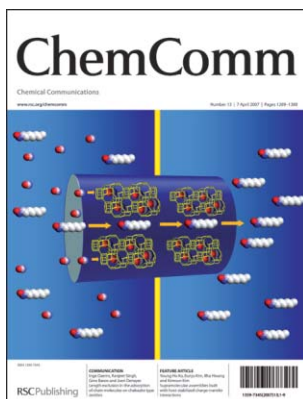
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Cover

See Joeri Denayer *et al.*, page 1316.

Length exclusion of chain molecules on chabazite zeolite. Image reproduced by permission of Inge Daems, Ranjeet Singh, Gino Baron and Joeri Denayer from *Chem. Commun.*, 2007, 1316.

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B25

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Chemical Biology

April 2007/Volume 2/Issue 4

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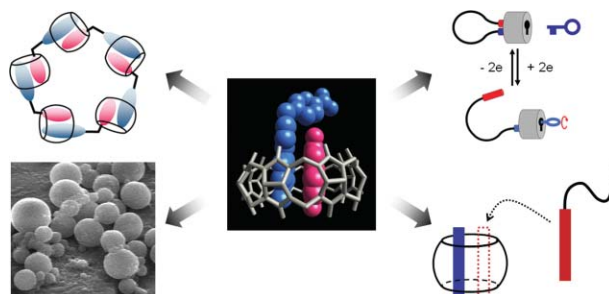
FEATURE ARTICLE

1305

Supramolecular assemblies built with host-stabilized charge-transfer interactions

Young Ho Ko, Eunju Kim, Ilha Hwang and Kimoon Kim*

Host-stabilized charge-transfer (CT) interactions and supramolecular assemblies built with these interactions are described.



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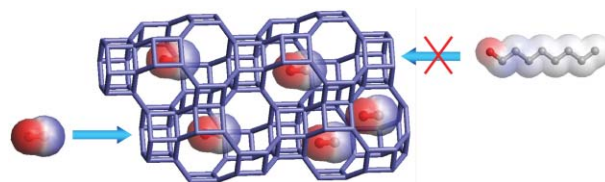
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Length exclusion in the adsorption of chain molecules on chabazite type zeolites

Inge Daems, Ranjeet Singh, Gino Baron and Joeri Denayer*

Zeolite chabazite selectively adsorbs short linear chain molecules and excludes long chain molecules from its internal voids.

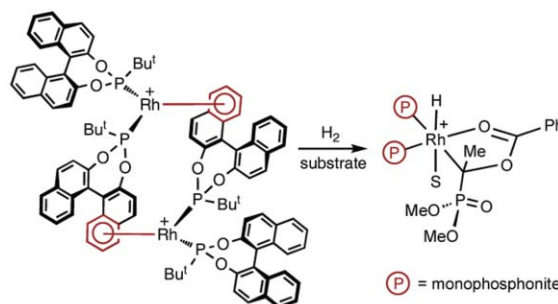


1319

New insights into the mechanism of asymmetric hydrogenation catalysed by monophosphonite–rhodium complexes

Ilya D. Gridnev,* Cheng Fan and Paul G. Pringle*

NMR reveals surprising differences between the binding of alkene substrates to monophos–Rh and diphos–Rh catalysts and provides definitive evidence that bis(monophos)–Rh species are involved in the hydrogenation catalysis.

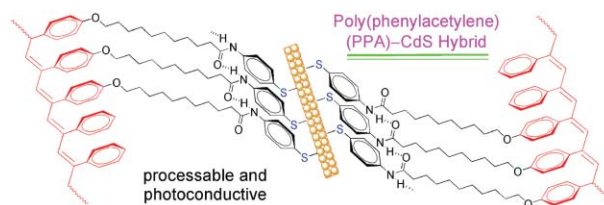


1322

Hybridization of thiol-functionalized poly(phenylacetylene) with cadmium sulfide nanorods: improved miscibility and enhanced photoconductivity

Hai-Peng Xu, Bo-Yu Xie, Wang-Zhang Yuan, Jing-Zhi Sun,* Feng Yang, Yong-Qiang Dong, Anjun Qin, Shuang Zhang, Mang Wang and Ben Zhong Tang*

Semiconductive CdS nanorods were hybridized with conjugated PPA chains, affording a readily processable and highly photoconductive PPA–CdS hybrid.

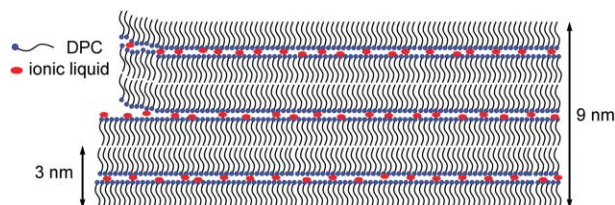


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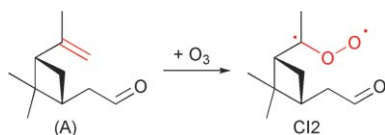
Dried foam films with a triple bilayer structure induced by ionic liquids

Weifeng Bu, Jian Jin and Izumi Ichinose*

Free-standing films with a triple bilayer structure were formed by drying micrometre-scale foam films of zwitterionic surfactants prepared from the aqueous solutions containing a certain concentration range of ionic liquids.



1328

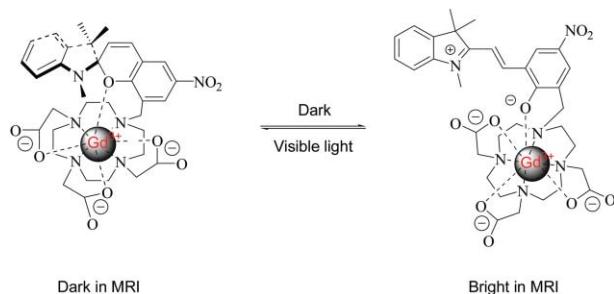


Pinic and pinonic acid formation in the reaction of ozone with α -pinene

Yan Ma, Timothy R. Willcox, Andrew T. Russell and George Marston*

The mechanism of formation of key compounds in atmospheric secondary aerosol (SOA) has been investigated by studying the products of the ozonolysis of an enal derived from α -pinene using gas chromatography coupled to mass spectrometry.

1331

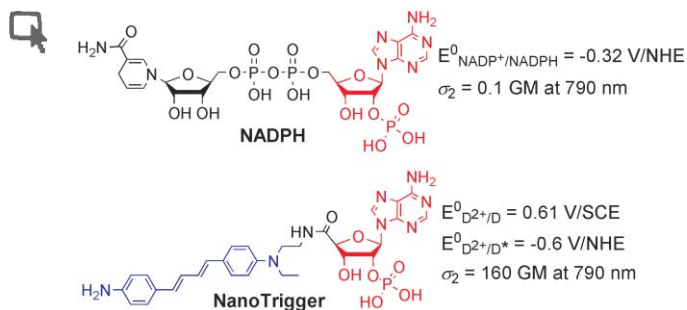


Photochromically-controlled, reversibly-activated MRI and optical contrast agent

Chuqiao Tu and Angelique Y. Louie*

The contrast agent which tethers a spiropyran group to a Gd-DO3A moiety has higher relaxivity and fluorescence intensity in the dark; the relaxivity and fluorescence intensity decrease after irradiation with visible light.

1334

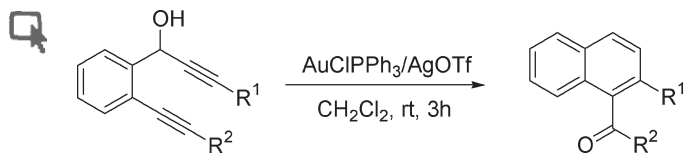


A NADPH substitute for selective photo-initiation of reductive bioprocesses *via* two-photon induced electron transfer

Anne-Claire Robin, Said Gmouh, Olivier Mongin, Viatcheslav Jouikov, Martinus H. V. Werts, Clément Gautier, Anny Slama-Schwok and Mireille Blanchard-Desce*

A NADPH substitute showing much larger two-photon absorption cross-section is described as an effective two-photon nano-trigger, able to transfer electrons to flavins only upon excitation.

1337



Gold-catalyzed cyclo-isomerization of 1,6-diyne-4-en-3-ols to form naphthyl ketone derivatives

Jian-Jou Lian and Rai-Shung Liu*

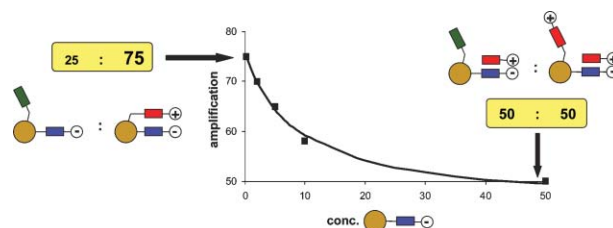
We report an efficient intramolecular cyclo-isomerization of 1,6-diyne-4-en-3-ols to give naphthyl ketone derivatives, catalyzed mainly by AuPPh_3OTf complex (2 mol%) under ambient conditions.

1340

Limitations of the “tethering” strategy for the detection of a weak noncovalent interaction

Giulio Gasparini, Marco Martin, Leonard J. Prins* and Paolo Scrimin*

The experimental conditions determine whether or not amplification occurs at the thermodynamic equilibrium in a dynamic molecular system in which the guest is captured by the molecular receptor.

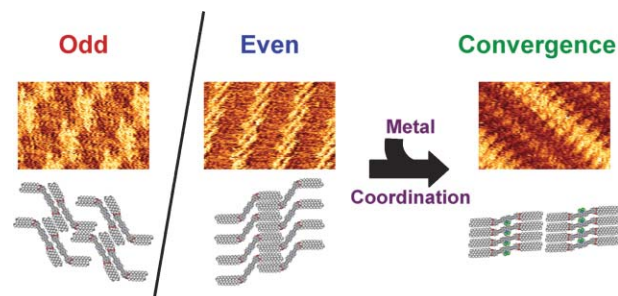


1343

Odd–even effect and metal induced structural convergence in self-assembled monolayers of bipyridine derivatives

Yoshihiro Kikkawa,* Emiko Koyama,* Seiji Tsuzuki, Kyoko Fujiwara, Koji Miyake, Hideo Tokuhisa and Masatoshi Kanosato

Scanning tunneling microscopy observation reveals that metal coordination of bipyridine derivatives (bpy) resulted in the convergence of the two-dimensional structure, despite the bare bpy structure being dominated by the odd–even effect of the peripheral alkyl chains.

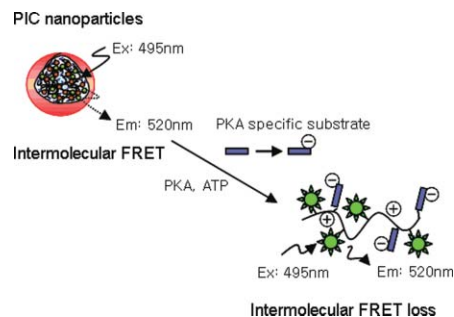


1346

Polymeric nanoparticles for protein kinase activity

Jong-Ho Kim, Seulki Lee, Kwangmeyung Kim, Hyesung Jeon, Rang-Woon Park, In-San Kim, Kuiwon Choi and Ick Chan Kwon*

Nanoparticles were prepared from poly-ion complexes. The nanoparticles were dissociated by phosphorylation, presented a strong FITC intensity and can be applied to high-throughput screening for large chemical libraries, for drug discovery of kinase inhibitors.

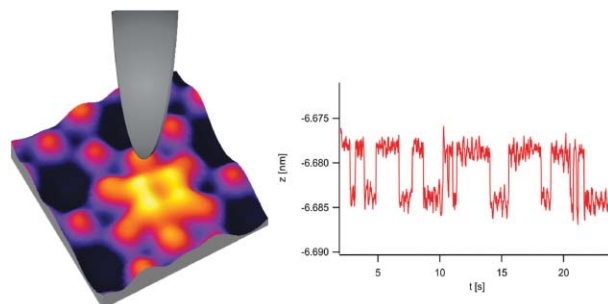


1349

Rotation–libration in a hierarchic supramolecular rotor–stator system: Arrhenius activation and retardation by local interaction

Markus Wahl, Meike Stöhr,* Hannes Spillmann, Thomas A. Jung* and Lutz H. Gade*

Caught in the act: Zinc-octaethylporphyrin (OEP), incorporated in the holes of the hexagonal organic molecular network on a Cu(111) surface, displays hindered rotation. The reorganization between the potential minima has been monitored by the “switching” of the STM tunnelling currents.





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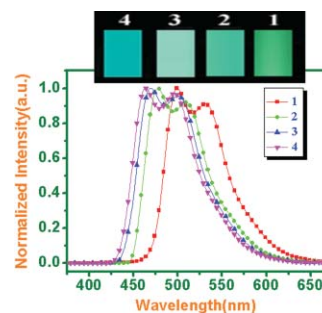


1352

Novel, highly efficient blue-emitting heteroleptic iridium(III) complexes based on fluorinated 1,3,4-oxadiazole: tuning to blue by dithiolate ancillary ligands

Lianqing Chen, Han You, Chuluo Yang,* Dongge Ma* and Jingui Qin*

Novel iridium(III) complexes with fluorinated 1,3,4-oxadiazole derivatives as cyclometalated ligands and dithiolates as ancillary ligands have been synthesized, and highly efficient OLEDs in the light-blue to blue-emitting region have been fabricated.

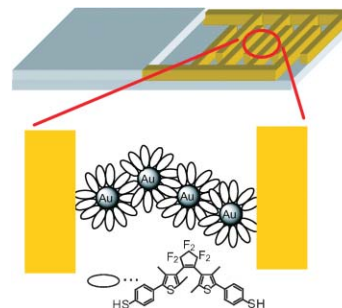


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Photoswitching of conductance of diarylethene-Au nanoparticle network

Masumi Ikeda, Naoki Tanifuji, Hidehiro Yamaguchi, Masahiro Irie* and Kenji Matsuda*

A network composed of gold nanoparticles covered with diarylethene dithiophenols was prepared on an interdigitated nanogapped gold electrode to show the reversible photoswitching of the conductance due to the photochromism of the diarylethene molecules induced by UV and visible light.

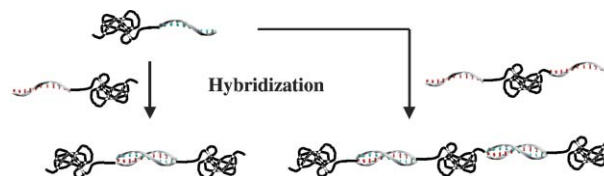


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DNA multiblock copolymers

Fikri E. Alemdaroglu, Meryem Safak, Jie Wang, Rüdiger Berger and Andreas Herrmann*

Well defined DNA tri- and pentablock architectures were generated by hybridization of single stranded DNA block copolymers.

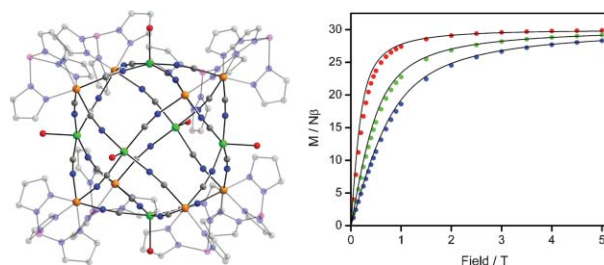


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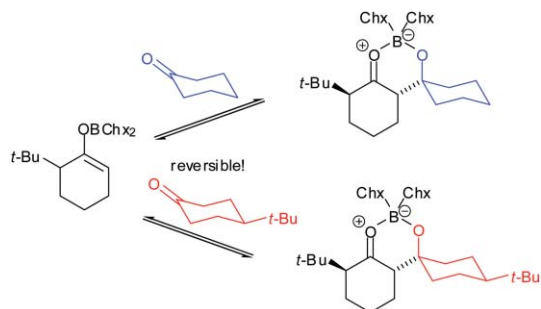
Linkage isomerism in a face-centered cubic Cu₆Cr₈(CN)₂₄ cluster with an S = 15 ground state

T. David Harris and Jeffrey R. Long*

The new building unit [TpCr(CN)₃]⁻ was employed in the formation of the face-centered cubic cluster [Tp₈(H₂O)₆Cu₆Cr₈(CN)₂₄]⁴⁺. Two isomers of this cluster, related through a thermally-induced linkage isomerism, were isolated, each exhibiting an S = 15 ground state.



1363

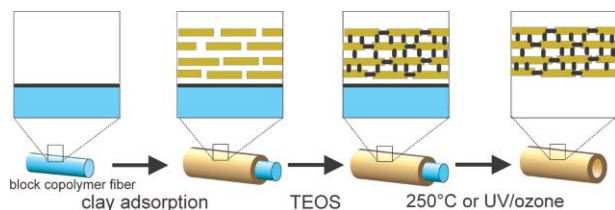


Reversibility in the boron-mediated ketone–ketone aldol reaction

Katie M. Cergol, Paul Jensen, Peter Turner and Mark J. Coster*

In contrast to the strictly irreversible aldol reactions of boron enolates with aldehydes, the boron-mediated ketone–ketone aldol reaction is reversible.

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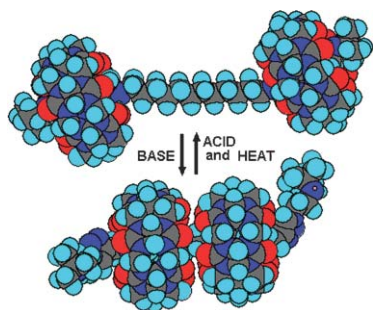


Hollow nanoparticle nanotubes with a nanoscale brick wall structure of clay mineral platelets

Robin H. A. Ras,* Teemu Ruotsalainen, Katri Laurikainen, Markus B. Linder and Olli Ikkala

Long hollow inorganic nanoparticle nanotubes have been synthesized by templating of block copolymer electrospun fibers with clay mineral platelets followed by interlinking of the platelets using condensation reactions.

1369

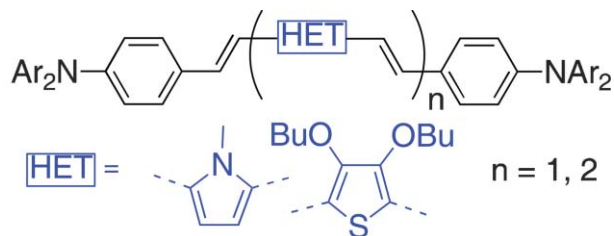


Molecular switch based on a cucurbit[6]uril containing bistable [3]rotaxane

Dönüs Tuncel,* Özgür Özsar, H. Burak Tiftik and Bekir Salih

A bistable CB6-based [3]rotaxane with two recognition sites has been prepared in a high yield synthesis through CB6-catalyzed 1,3-dipolar cycloaddition; this rotaxane behaves as a molecular switch by the movement of rings under base, acid and heat stimuli from one location to the other.

1372



$\delta_{\max} = 1000\text{--}5000 \text{ GM at } 600\text{--}650 \text{ nm}$

High two-photon cross-sections in bis(diarylamino)styryl chromophores with electron-rich heterocycle and bis(heterocycle)vinylene bridges

S. Zheng, L. Beverina, S. Barlow, E. Zojer, J. Fu, L. A. Padilha, C. Fink, O. Kwon, Y. Yi, Z. Shuai, E. W. Van Stryland, D. J. Hagan, J.-L. Brédas and S. R. Marder*

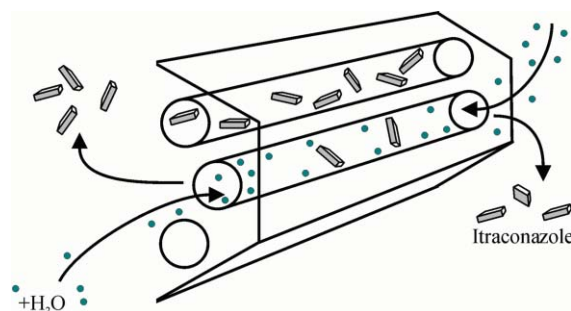
Chromophores in which two (diarylamino)styryl donors are bridged by electron-rich heterocycles exhibit moderate two-photon absorption peaks at 700–830 nm and considerably stronger absorptions at 600–650 nm.

1375

Enhanced release of itraconazole from ordered mesoporous SBA-15 silica materials

Randy Mellaerts, Caroline A. Aerts, Jan Van Humbeeck, Patrick Augustijns, Guy Van den Mooter and Johan A. Martens*

Above a critical mesopore diameter of ordered mesoporous SBA-15 silica materials, enhanced release of hydrophobic drug itraconazole can be obtained.



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