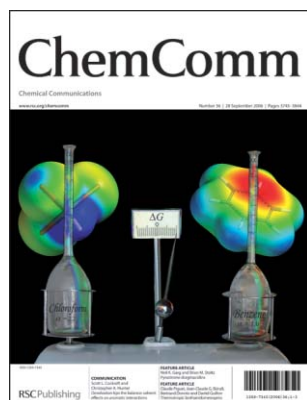


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ISSN 1359-7345 CODEN CHCOFS (36) 3745–3844 (2006)



Cover

See Scott L. Cockroft and Christopher A. Hunter page 3806. The folding behaviour of torsion balance molecules is rationalised by considering the H-bond properties of the solvent (chloroform or benzene). Image reproduced by permission of Scott L. Cockroft and Christopher A. Hunter, from *Chem. Commun.*, 2006, 3806.

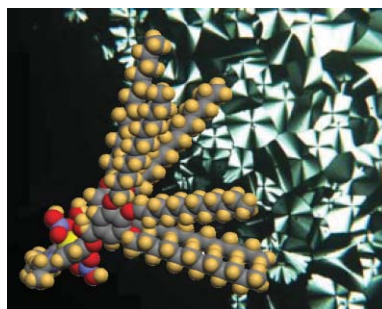
FEATURE ARTICLES

3755

Thermotropic lanthanidomesogens

Claude Piguet,* Jean-Claude G. Bünzli,* Bertrand Donnio and Daniel Guillon

Although thermotropic lanthanide-containing mesophases have been known for more than two decades, it is only recently that new strategies have been developed for producing lanthanidomesogens with predetermined mesoscopic organization and luminescent properties.

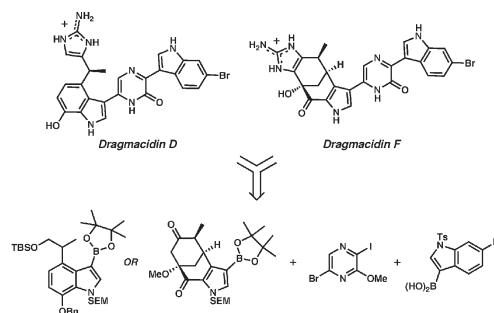


3769

A unified synthetic approach to the pyrazinone drarmacidins

Neil K. Garg and Brian M. Stoltz*

This review describes recent developments from our laboratory involving the synthesis of the structurally complex, pyrazinone-containing drarmacidin alkaloids.



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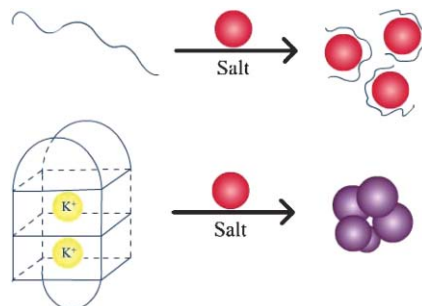
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3780

Unmodified gold nanoparticles as a colorimetric probe for potassium DNA aptamers

Lihua Wang, Xingfen Liu, Xiaofang Hu, Shiping Song and Chunhai Fan*

Unmodified gold nanoparticles serve as an effective colorimetric probe for aptamer-based recognition processes.



3783

“Click” synthesis of small molecule probes for activity-based fingerprinting of matrix metalloproteases

Jun Wang, Mahesh Uttamchandani, Junqi Li, Mingyu Hu and Shao Q. Yao*

By using “Click Chemistry”, the facile synthesis of various affinity-based hydroxamate probes was achieved. They enable generation of activity-based fingerprints of a variety of metalloproteases, including matrix metalloproteases (MMPs), in proteomics experiments.

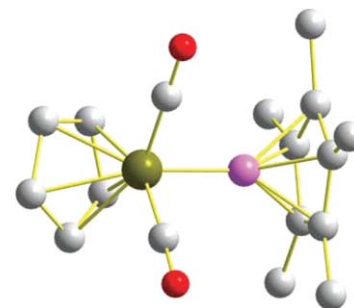


3786

A single-bonded cationic terminal borylene complex

Dragoslav Vidovic, Michael Findlater, Gregor Reeske and Alan H. Cowley*

The first single-bonded cationic terminal borylene complex has been prepared and structurally characterized.

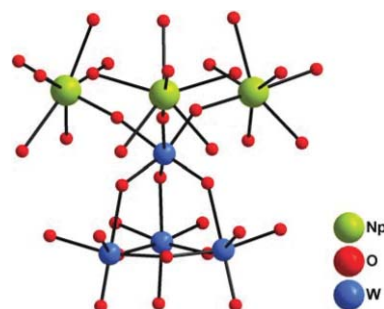


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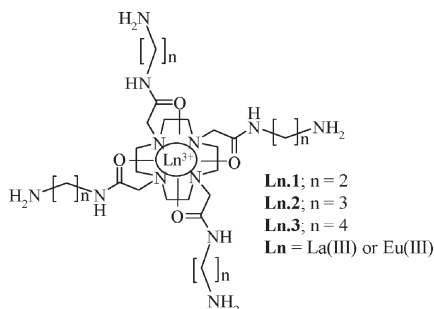
Oxoneptunium(V) as part of the framework of a polyoxometalate

Roy Copping, Andrew J. Gaunt, Iain May,*
Clint A. Sharrad, David Collison, Madeleine Helliwell,
O. Danny Fox and Chris J. Jones

$[(\text{Np}_3\text{W}_4\text{O}_{15})(\text{H}_2\text{O})_3(\text{BiW}_9\text{O}_{33})_3]^{18-}$ and $[(\text{Np}_3\text{W}_4\text{O}_{15})(\text{H}_2\text{O})_3(\text{SbW}_9\text{O}_{33})_3]^{18-}$ both contain three neptunyl(V) moieties encapsulated within heteropolyoxotungstate frameworks in which axial $\{\text{NpO}_2\}^+$ oxygens form one face of a WO_6 octahedron in a central $\{\text{Np}_3\text{W}_4\text{O}_{15}\}^{9+}$ unit.



3791

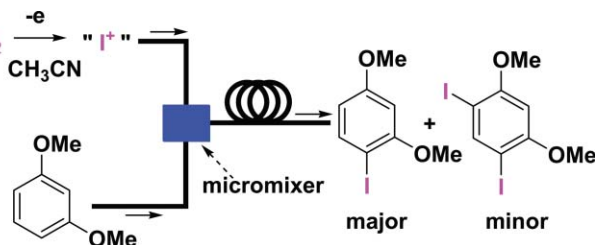


Tuning the properties of cyclen based lanthanide complexes for phosphodiester hydrolysis; the role of basic cofactors

Ann-Marie Fanning, Sally E. Plush and Thorfinnur Gunnlaugsson*

The synthesis and physical evaluation of several novel lanthanide complexes as ribonuclease mimics are described. These give rise to large enhancements in the rate of hydrolysis of HPNP at physiological pH.

3794

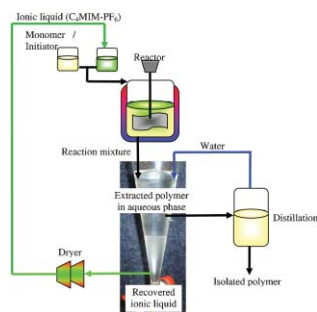


Selective monoiodination of aromatic compounds with electrochemically generated I⁺ using micromixing

Koji Midorikawa, Seiji Suga and Jun-ichi Yoshida*

Selective monoiodination of aromatic compounds such as dimethoxybenzene has been successfully achieved with I⁺, which is generated by anodic oxidation of I₂ in acetonitrile, using micromixing.

3797

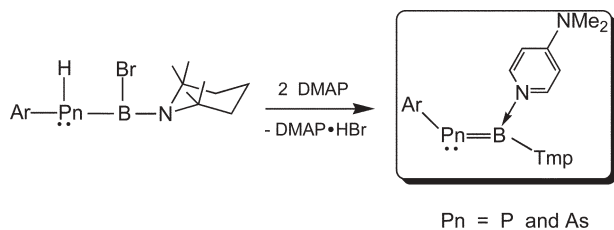


Fast and “green” living cationic ring opening polymerization of 2-ethyl-2-oxazoline in ionic liquids under microwave irradiation

Carlos Guerrero-Sanchez, Richard Hoogenboom and Ulrich S. Schubert*

The efficient use of ionic liquids and avoidance of volatile organic compounds for polymer synthesis are demonstrated including ionic liquid selection, kinetic investigations on the polymerization reaction and ionic liquid recycling.

3800



A donor-stabilization strategy for the preparation of compounds featuring P=B and As=B double bonds

Eric Rivard, W. Alexander Merrill, James C. Fettinger and Philip P. Power*

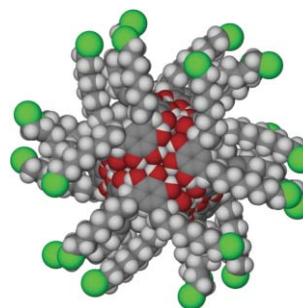
A new class of heavier group 15 compounds that engage in multiple bonding with boron has been synthesized using a simple donor-stabilization protocol.

3803

Synthesis and structural characterisation of lower rim halogenated pyrogallol[4]arenes: bi-layers and hexameric nano-capsules

Scott J. Dalgarno, Nicholas P. Power, Jochen Antesberger, Robert M. McKinlay and Jerry L. Atwood*

Two new 'lower rim' halogenated pyrogallol[4]arenes have been synthesised. Under various solvent conditions, these hosts self-assemble in either bi-layer or hexameric nano-capsule motifs, as identified by X-ray diffraction.

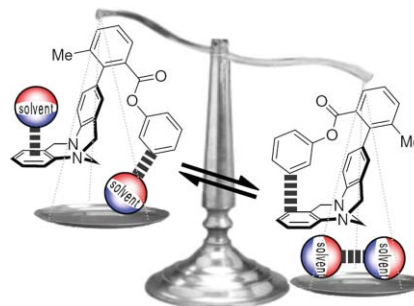


3806

Desolvation tips the balance: solvent effects on aromatic interactions

Scott L. Cockcroft and Christopher A. Hunter*

The folding behaviour of the molecular torsion balance framework is rationalised by considering the effects of solvation.

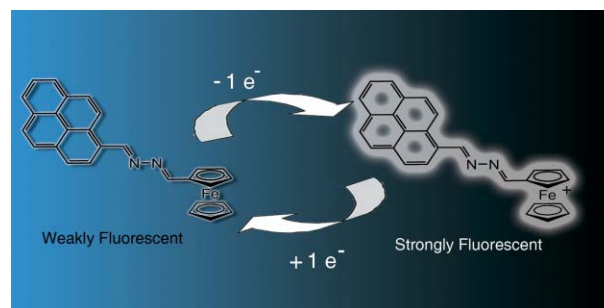


3809

A simple and robust reversible redox–fluorescence molecular switch based on a 1,4-disubstituted azine with ferrocene and pyrene units

Rosario Martínez, Imma Ratera, Alberto Tárraga, Pedro Molina* and Jaume Veciana*

Taking advantage of the properties of the ferrocene as a redox and electron donor active unit and the pyrene as a fluorescent unit, dyad **2** shows a fast and reversible redox-switchable fluorescence emission.

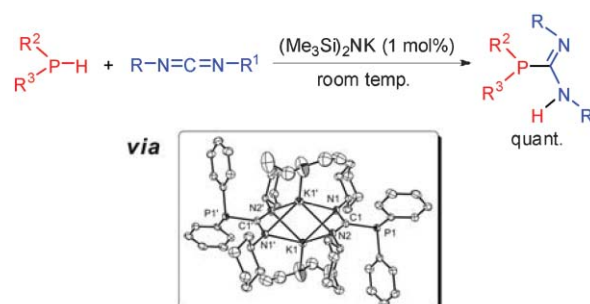


3812

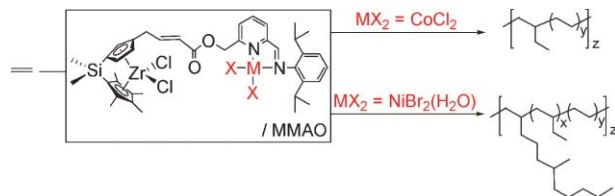
Alkali-metal-catalyzed addition of primary and secondary phosphines to carbodiimides. A general and efficient route to substituted phosphguanidines

Wen-Xiong Zhang, Masayoshi Nishiura and Zhaomin Hou*

Alkali metal compounds such as $(\text{Me}_3\text{Si})_2\text{NK}$ act as excellent pre-catalysts for the addition of phosphines to carbodiimides, which offers the first general and atom-economical route to phosphguanidines, with excellent tolerability to aromatic C–Br and C–Cl bonds.



3815

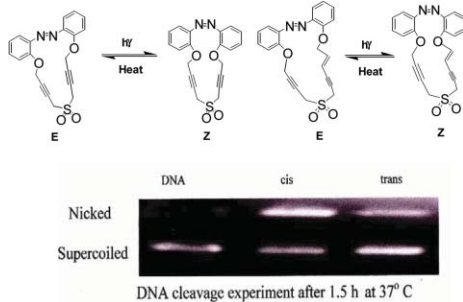


Early-late heterobimetallic complexes as initiator for ethylene polymerization. Cooperative effect of two metal centers to afford highly branched polyethylene

Junpei Kuwabara, Daisuke Takeuchi and Kohtaro Osakada*

Ethylene polymerization initiated by early-late transition-metal complexes afforded a polymer with different branched structures and properties depending on the type of late transition-metal.

3818

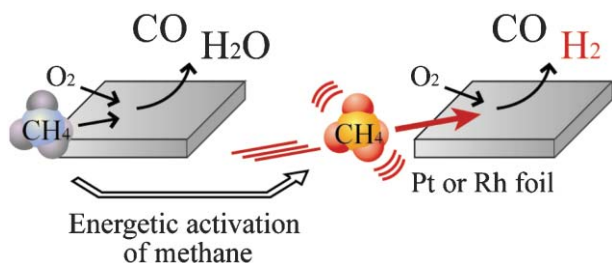


Photoisomerization as a modulator of the DNA-cleaving efficiency of novel azo bispropargyl sulfones

Moumita Kar and Amit Basak*

Novel azobenzene based bispropargyl sulfones have been prepared and studies indicated a higher chemical and DNA-cleaving activity for the Z-isomers.

3821

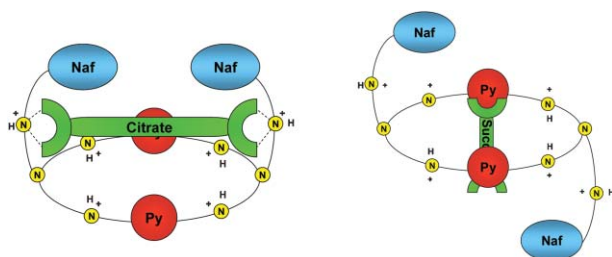


The promoting effect of energetic activation of a methane molecular-beam in the direct catalytic partial oxidation of methane

Toshiaki Sasaki, Kenji Nakao, Keichi Tomishige and Kimio Kunimori*

Energetic activation of a methane molecular-beam promoted remarkably the direct catalytic partial oxidation on Pt and Rh foils, in particular, hydrogen formation was dramatically enhanced.

3824



Specific interaction of citrate with bis(fluorophoric) bi(brachial) lariat aza-crown in comparison with the other components of the Krebs cycle

M. Paz Clares, Carlos Lodeiro, Damián Fernández, A. Jorge Parola, Fernando Pina,* Enrique García-España,* Conxa Soriano and Roberto Tejero

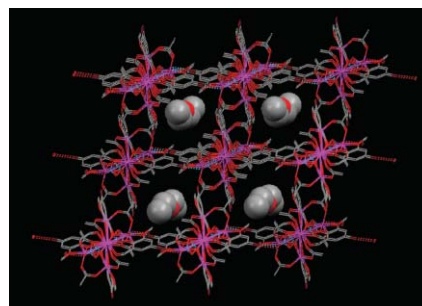
Among the Krebs cycle components, just citrate enhances the fluorescence of a new bi(brachial) lariat aza-crown containing appended naphthalene fluorophores.

3827

Reversible guest molecule encapsulation in the 3-D framework of a heteropolynuclear luminescent Zn_4Eu_2 cage complex

Xiaoping Yang, Benjamin P. Hahn, Richard A. Jones,* Keith J. Stevenson,* J. Steven Swinnea and Qiaoyin Wu

Guest molecules of diethyl ether or methanol are reversibly encapsulated in cavities formed by the 3-dimensional supramolecular framework of heteropolynuclear, luminescent $[Eu_2Zn_4L_4(OAc)_6(NO_3)_2(OH)_2]$.

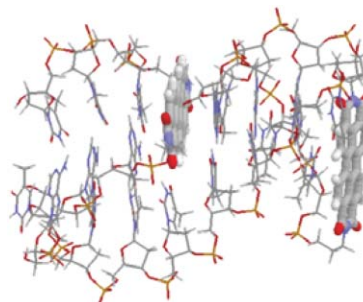


3830

A cooperative beads-on-a-string approach to exceptionally stable DNA triplexes

Yan Zheng, Hai Long, George C. Schatz and Frederick D. Lewis*

Molecular modeling provides a possible structure for the stable DNA triplex formed by head-to-tail assembly of synthetic DNA hairpins having perylene diimide linkers on a poly(dT) oligomer.

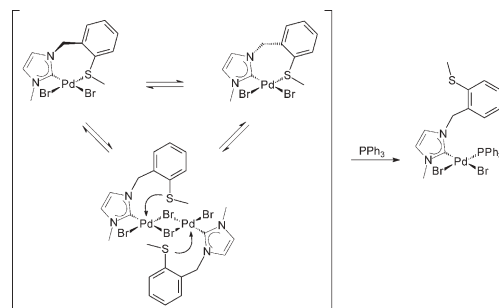


3833

Hemilabile behavior of a thioether-functionalized N-heterocyclic carbene ligand

Han Vinh Huynh,* Chun Hui Yeo and Geok Kheng Tan

The truly hemilabile nature of a novel thioether-functionalized N-heterocyclic carbene ligand is demonstrated in a range of Pd(II) complexes.

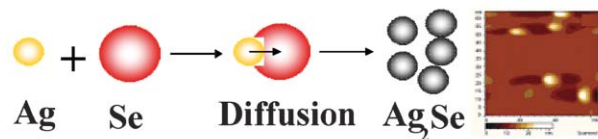


3836

Room temperature synthesis of coinage metal (Ag, Cu) chalcogenides

Snigdhamayee Praharaj, Sudip Nath, Sudipa Panigrahi, Soumen Basu, Sujit Kumar Ghosh, Surojit Pande, Subhra Jana and Tarasankar Pal*

Coinage metal chalcogenides in their nanoregime have been synthesized in aqueous medium at room temperature by mixing the nanoparticles of silver or copper with selenium nanoparticles which are authenticated by UV-vis, XRD and TEM analyses.



3841

Keith Man-Chung Wong, Nianyong Zhu
and Vivian Wing-Wah Yam**Unprecedented formation of an acetamidate-bridged
dinuclear platinum(II) terpyridyl
complex—correlation of luminescence properties with the
crystal forms and dimerization studies in solution**

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