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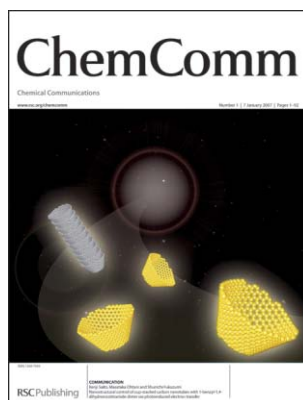
IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS (1) 1–92 (2007)



Cover

See Nicolas Winssinger and Sofia Barluenga, page 22. The cover depicts several members of the resorcylic acid lactone (RLA) family over a cartoon representation of the different phases of the cell cycle. A number of RLAs have been shown to be potent inhibitors of kinases and CDKs implicated in regulating cell cycle progression, suggesting that this scaffold may be a privileged structure for kinase inhibition. Image reproduced by permission of Nicolas Winssinger and Sofia Barluenga, from *Chem. Commun.*, 2007, 22.



Inside cover

See Shunichi Fukuzumi *et al.*, page 55. The image shows the cup-shaped carbons with uniform size generated by photoinduced electron-transfer reduction of cup-stacked carbon nanotubes with 1-benzyl-1,4-dihydronicotinamide dimer. Image reproduced by permission of Kenji Saito, Masataka Ohtani and Shunichi Fukuzumi, from *Chem. Commun.*, 2007, 55.

CHEMICAL BIOLOGY

B1

Drawing together research highlights and news from all RSC publications, *Chemical Biology* provides a 'snapshot' of the latest developments in chemical biology, showcasing newsworthy articles and significant scientific advances.

Chemical Biology

January 2007/Volume 2/Issue 1

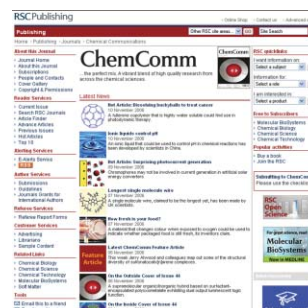
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EDITORIAL

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Happy New Year from ChemComm

Roeland Nolte, Sarah Thomas and Kathryn Sear reflect on yet another exciting year for *ChemComm* and look to the future and the exciting developments in RSC Publishing.



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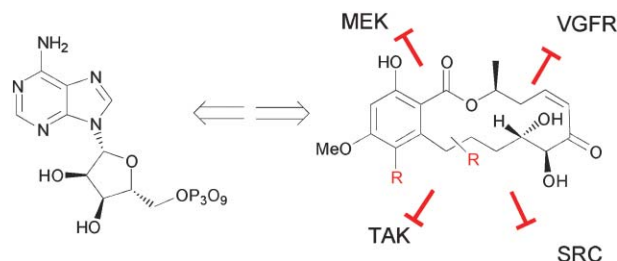
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Chemistry and biology of resorcylic acid lactones

Nicolas Winssinger* and Sofia Barluenga

While resorcylic acid lactones (RALs) have been known for a long time, the more recent discoveries that some of them are potent kinase inhibitors have stimulated a renewed interest in this family of natural products. Despite the lack of homology to purine analogues, the RALs have been shown to be competitive with ATP. Are the RALs a good scaffold for kinase or ATPase inhibitions?

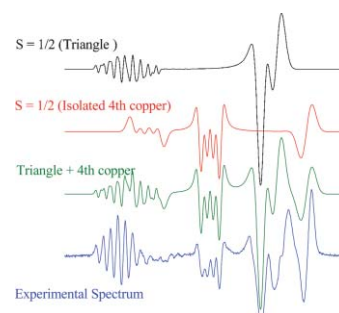


COMMUNICATIONS

Metal cages using a bulky phosphonate as a ligand

Viswanathan Baskar,* Muralidharan Shanmugam, E. Carolina Sañudo, Maheswaran Shanmugam, David Collison, Eric J. L. McInnes, Qiang Wei and Richard E. P. Winpenny*

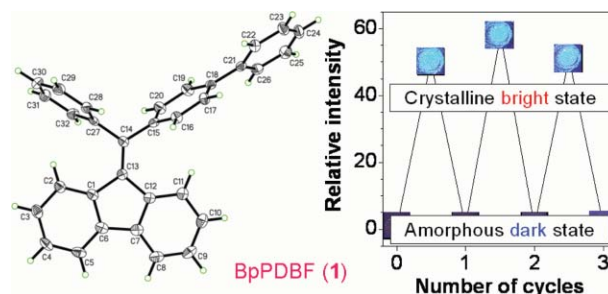
Synthesis, structure, and magnetic and electronic properties of 3d-metal cages of tritylphosphonate ligands are reported.



Switching the light emission of (4-biphenyl)phenyldibenzofulvene by morphological modulation: crystallization-induced emission enhancement

Yongqiang Dong, Jacky W. Y. Lam, Anjun Qin, Zhen Li, Jingzhi Sun, Herman H.-Y. Sung, Ian D. Williams and Ben Zhong Tang*

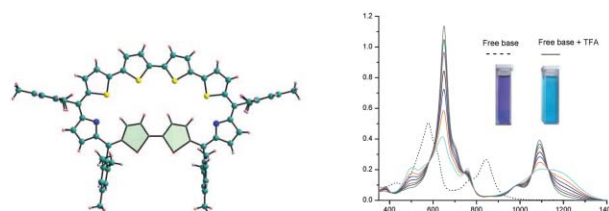
Light emission from a thin solid film of (4-biphenyl)phenyldibenzofulvene (**1**) can be repeatedly switched between dark and bright states by manipulating its morphology between crystalline and amorphous phases.



Near IR absorbing planar aromatic [34]octaphyrins(1.1.0.1.1.0.0.0) containing a quaterthiophene subunit

Rajeev Kumar, Rajneesh Misra, Tavarekere K. Chandrashekar* and Eringathodi Suresh

The synthesis and structural characterization of the first examples of planar aromatic core modified [34]octaphyrins(1.1.0.1.1.0.0.0) with three different heteroatoms containing a quaterthiophene subunit are reported.



Proteins and Cells at Functional Interfaces

Don't miss this superb theme issue of *Soft Matter*, guest edited by Professor Joachim Spatz (MPI Stuttgart and University of Heidelberg, Germany).

Soft Matter, 2007, issue 3 (March)
Scheduled web publication date:
20th February 2007



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Article preview:

Soft matters in cell adhesion: rigidity sensing on soft elastic substrates

U. Schwarz, *Soft Matter*, 2007, **3**, DOI: 10.1039/b606409d

Probing cell shape regulation with patterned substratum: requirement of myosin II-mediated contractility

C. C. Mader, E. H. Hinchcliffe and Y.-L. Wang, *Soft Matter*, 2007, **3**, DOI: 10.1039/b606590b

Dynamic control of biomolecular activity using electrical interfaces

I. Y. Wong, M. J. Footer and N. A. Melosh, *Soft Matter*, 2007, **3**, DOI:10.1039/b607279h

Engineered networks of oriented microtubule filaments for directed cargo transport

R. K. Doot, H. Hess and V. Vogel, *Soft Matter*, 2007, **3**, DOI:10.1039/b607281j

Nuclear pores and membrane holes: generic models of confined chains as entropic barriers in pore stabilization

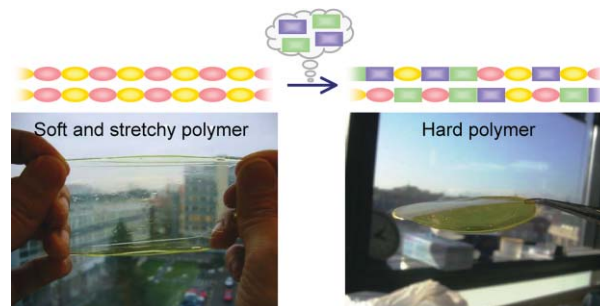
P. J. Photos, H. Bermudez, H. Aranda-Espinoza, J. Shillcock and D. E. Discher, *Soft Matter*, 2007, **3**, DOI:10.1039/b611412c

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Soft-to-hard transformation of the mechanical properties of dynamic covalent polymers through component incorporation

Takashi Ono, Shunsuke Fujii, Tadahito Nobori and Jean-Marie Lehn*

The mechanical properties of acylhydrazone dynamic polymers may be converted from soft to hard by the incorporation of rigid monomeric components into the original soft polymer backbone, taking advantage of acylhydrazone bond exchange.

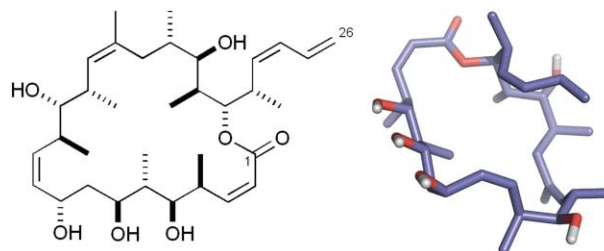


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Design, synthesis and biological evaluation of a macrocyclic discodermolide/dictyostatin hybrid

Ian Paterson* and Nicola M. Gardner

A 22-membered macrocyclic discodermolide/dictyostatin hybrid has been designed and synthesised; biological evaluation against a range of human cancer cell lines revealed significant levels of growth inhibition.

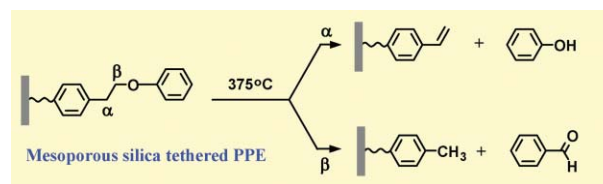


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Confinement effects on product selectivity in the pyrolysis of phenethyl phenyl ether in mesoporous silica

Michelle K. Kidder, Phillip F. Britt, Alan L. Chaffee and A. C. Buchanan, III*

Confinement of phenethyl phenyl ether in mesoporous silica results in a substantial increase in the α/β -product selectivity, which can be further enhanced by control over grafting density and introduction of tethered spacer molecules.

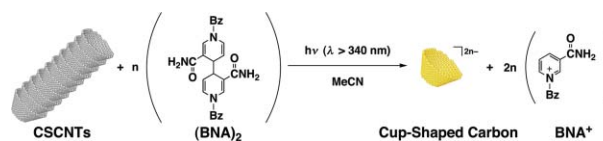


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Nanostructural control of cup-shaped carbon nanotubes with 1-benzyl-1,4-dihydropyridinamide dimer via photoinduced electron transfer

Kenji Saito, Masataka Ohtani and Shunichi Fukuzumi*

Photoinduced electron transfer from 1-benzyl-1,4-dihydropyridinamide dimer [(BNA)₂] to CSCNTs results in destacking CSCNTs to afford cup-shaped carbons with uniform size.



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Organizers: Peter Mombaerts and Leslie B. Vosshall
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Biological Functions and Mechanisms

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RNAi for Target Validation and as a Therapeutic

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Nanotechnology in Biomedicine

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Structurally characterized intermediates in the stepwise insertion of CO–ethylene or CO–methyl acrylate into the metal–carbon bond of Pd(II) complexes stabilized by (phosphinomethyl)oxazoline ligands

Magno Agostinho and Pierre Braunstein*

Initial steps in the sequential insertion of CO–ethylene or CO–methyl acrylate into the Pd–Me bond of (phosphinomethyl)oxazoline complexes have been fully characterized, including by X-ray diffraction.

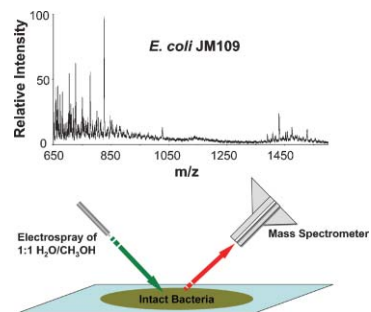


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Rapid ambient mass spectrometric profiling of intact, untreated bacteria using desorption electrospray ionization

Yishu Song, Nari Talaty, W. Andy Tao, Zhengzheng Pan and R. Graham Cooks*

Desorption electrospray ionization (DESI) allows the rapid acquisition of highly reproducible mass spectra from intact microorganisms under ambient conditions; application of principal component analysis to the data allows sub-species differentiation.

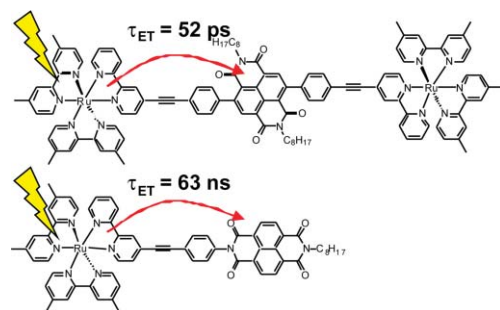


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Very large acceleration of the photoinduced electron transfer in a Ru(bpy)₃–naphthalene bisimide dyad bridged on the naphthyl core

Frédérique Chaignon, Magnus Falkenström, Susanne Karlsson, Errol Blart, Fabrice Odobel* and Leif Hammarström*

By linking a naphthalenebisimide (NBI) unit to [Ru(bpy)₃]²⁺ on the naphthyl core the rate of photoinduced Ru-to-NBI electron transfer was 1000-fold increased compared to the case with a conventional linking on the nitrogen.

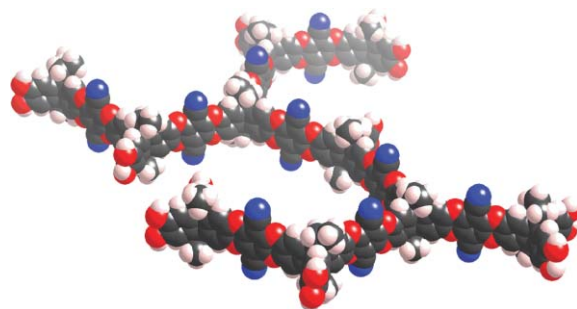


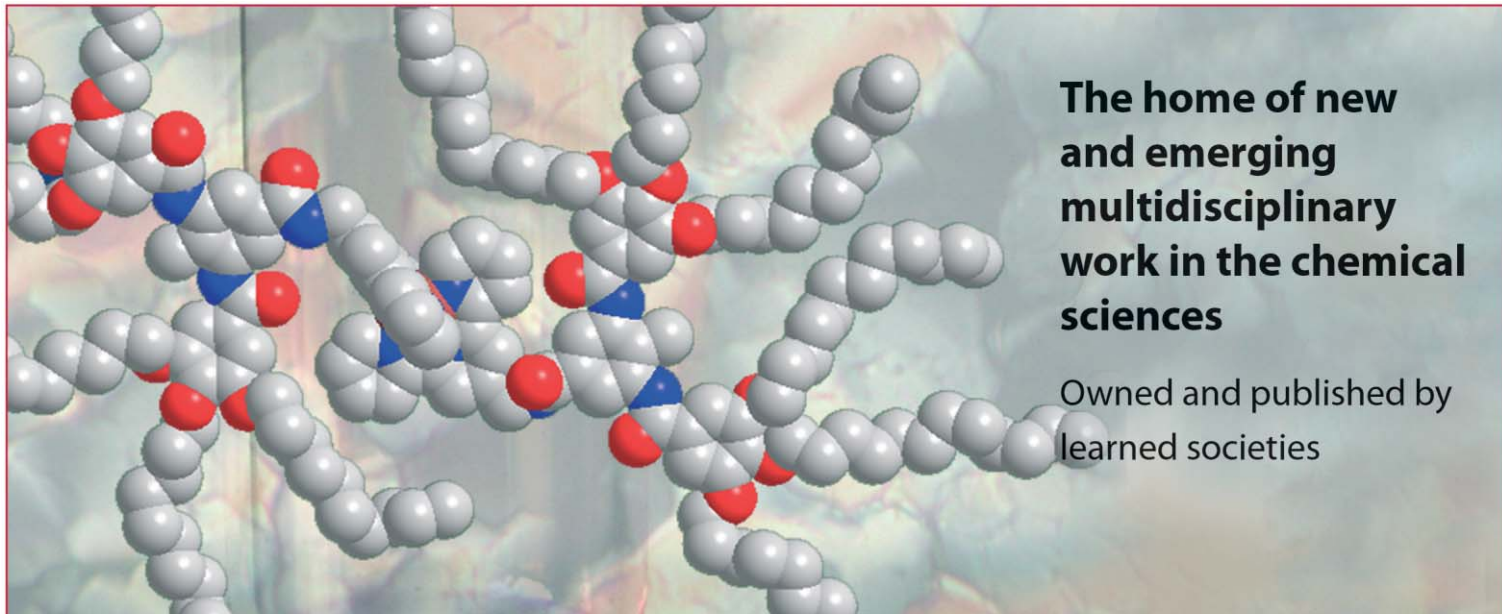
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A triptycene-based polymer of intrinsic microporosity that displays enhanced surface area and hydrogen adsorption

Bader S. Ghanem, Kadhum J. Msayib, Neil B. McKeown,* Kenneth D. M. Harris, Zhigang Pan, Peter M. Budd,* Anna Butler, James Selbie, David Book and Allan Walton

A novel triptycene-based polymer of intrinsic microporosity (Trip-PIM) displays enhanced surface area (1065 m² g⁻¹) and reversibly adsorbs 1.65% hydrogen by mass at 1 bar/77 K and 2.71% at 10 bar/77 K.





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Take a look at these examples of recently published papers:

Weak paramagnetism in compounds of the type $Cp^*_2Yb(bipy)$

Marc D. Walter, Madeleine Schultz, Richard A. Andersen (USA)

A phen-terpy conjugate whose chelate coordination axes are orthogonal to one another and its zinc complex

Benoît Champin, Valérie Sartor, Jean-Pierre Sauvage (France)

A catalyst for an acetal hydrolysis reaction from a dynamic combinatorial library

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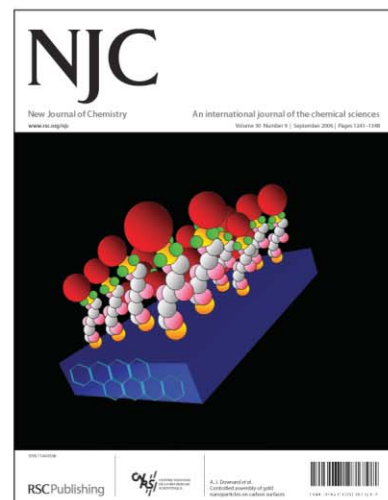
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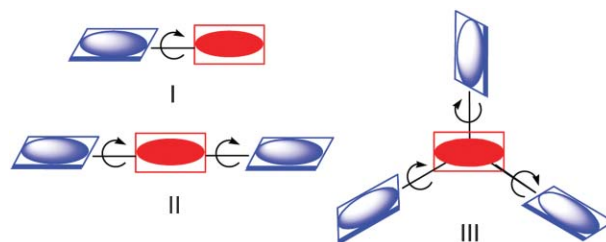
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Fluorescence enhancements of benzene-cored luminophors by restricted intramolecular rotations: AIE and AIEE effects

Qi Zeng, Zhen Li,* Yongqiang Dong, Chong'an Di, Anjun Qin, Yuning Hong, Li Ji, Zhichao Zhu, Cathy K. W. Jim, Gui Yu, Qianqian Li, Zhongan Li, Yunqi Liu, Jingui Qin* and Ben Zhong Tang*

Light emissions of mono- (I), di- (II) and triarylated (III) benzenes are enhanced by two orders of magnitude by aggregate formation due to the restrictions of their intramolecular rotations in the solid state.

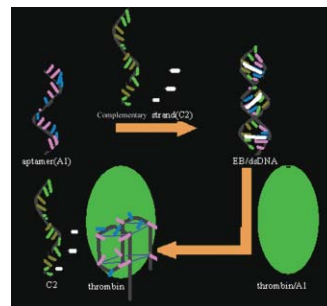


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Sensitive detection of protein by an aptamer-based label-free fluorescing molecular switch

Bingling Li, Hui Wei and Shaojun Dong*

A simple, sensitive aptamer-based label-free method for protein detection was developed to enlarge the application of fluorescing molecular switches.

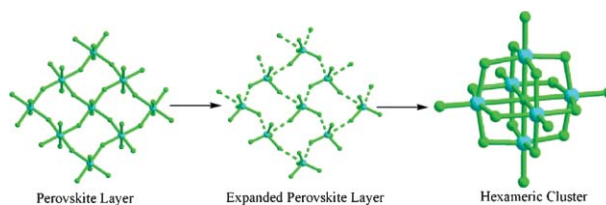


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From crystal engineering to cluster engineering: How to transform cadmium chloride from 2-D to 0-D

Chun-Long Chen and Alicia M. Beatty*

A guide for the systematic transformation of cadmium chloride perovskite layers to "expanded" 2-D and finally to a 0-D hexanuclear cadmium chloride cluster by varying the size of substituents on the associated counterions (H vs. methyl vs. ethyl) is demonstrated.

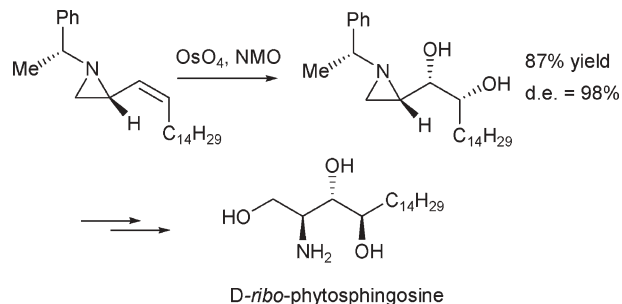


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Dihydroxylation of 2-vinylaziridine: efficient synthesis of D-ribo-phytosphingosine

Hyo Jae Yoon, Yong-Woo Kim, Baek Kyoung Lee, Won Koo Lee,* Yongeun Kim and Hyun-Joon Ha*

An efficient and highly stereoselective synthesis of D-ribo-(2*S*,3*S*,4*R*)-phytosphingosine was accomplished in 62% overall yield starting from commercially available (2*S*)-hydroxymethylaziridine *via* osmium-catalyzed asymmetric dihydroxylation as a key step.



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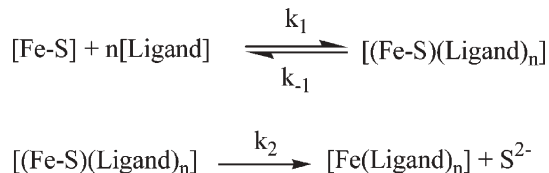
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Iron–sulfur cluster stability. Kinetics and mechanism of ligand-promoted cluster degradation

Shu-pao Wu and J. A. Cowan*

Reactivity studies of iron–sulfur cluster proteins with chelating ligands model the reactivity of cluster scaffold proteins such as ISU, and suggest formation of a pre-reaction complex prior to cluster extrusion.

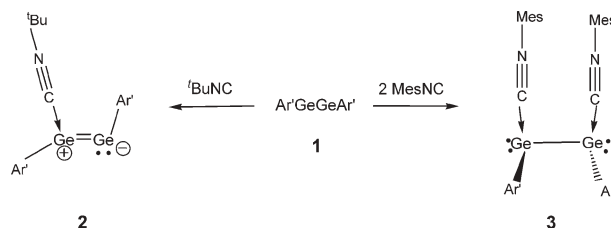


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Lewis base induced tuning of the Ge–Ge bond order in a “digermynes”

Geoffrey H. Spikes and Philip P. Power*

The reaction of the “digermynes” $\text{Ar}'\text{GeGeAr}'$ ($\text{Ar}' = \text{C}_6\text{H}_3-2,6(\text{C}_6\text{H}_3-2,6-\text{Pr}^i)_2$) with MesNC ($\text{Mes} = \text{C}_6\text{H}_2-2,4,6-\text{Me}_3$) affords the adduct $\text{Ar}'\text{GeGeAr}' \cdot 2\text{MesNC}$ which has a very long Ge–Ge single bond.

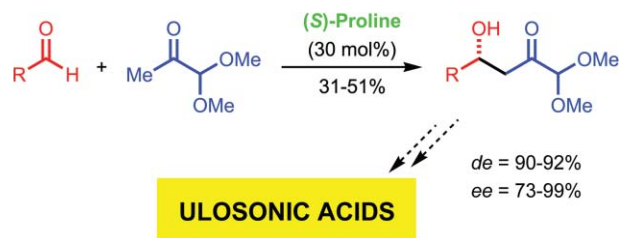


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Proline organocatalysis as a new tool for the asymmetric synthesis of ulosonic acid precursors

Dieter Enders* and Tecla Gasperi

In a key aldol reaction for the synthesis of ulosonic acid precursors, the dimethylacetal of pyruvic aldehyde is used as phosphoenolpyruvate (PEP) equivalent and the amino acid proline functions as an organocatalyst, imitating the enzyme.




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