

IN THIS ISSUE

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Cover

See Zhaohua Dai and James W. Canary, p. 1708.
The propeller shape of this mariposa lily from the Western US is reminiscent of the tripodal ligand complexes of zinc(II) that are the topic of a Perspective by Dai and Canary.
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CHEMICAL SCIENCE

C73

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Chemical Science

October 2007/Volume 4/Issue 10

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OPINION

1707

What is and what isn't a clock reaction?

Gábor Lente,* György Bazsa and István Fábián

Clear distinction should be made between the several different causes that may lead to an induction period in a kinetic experiment.

Clock reaction:



Autocatalysis:



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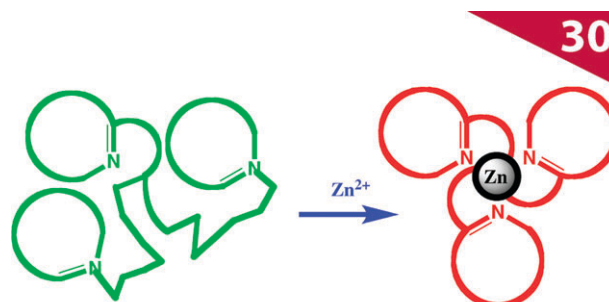
PERSPECTIVE

1708

Tailoring tripodal ligands for zinc sensing

Zhaohua Dai* and James W. Canary*

30th Anniversary article: This review describes recent advances in the development of picolylamine-based tripodal zinc sensors with detection by steady-state fluorescence, fluorescence lifetimes and chiroptical spectroscopy.



LETTERS

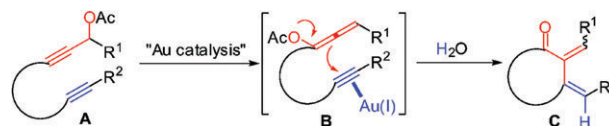


1719

Gold-catalyzed cyclizations of alkyne propargylic acetates to 2,3-bis(alkylidene)cycloalkanones and their related benzene derivatives

Chang Ho Oh* and Ahyun Kim

We report a new and highly-convenient Au-catalyzed cyclization of alkyne propargylic acetates leading to 2,3-bis(alkylidene)cyclohexanones and their cycloadditions with a pendant dienophile.

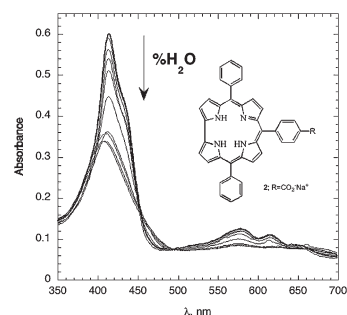


1722

Kinetic and spectroscopic studies on the self-aggregation of a *meso*-substituted amphiphilic corrole derivative

Manuela Stefanelli, Donato Monti,* Mariano Venanzi and Roberto Paolesse*

A *meso*-substituted amphiphilic corrole derivative forms aggregates with regular morphology, different from those obtained with related porphyrin structures, opening interesting perspectives for the application of these derivatives in important fields of research.

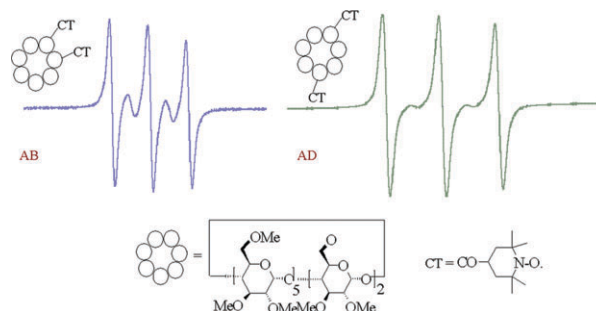


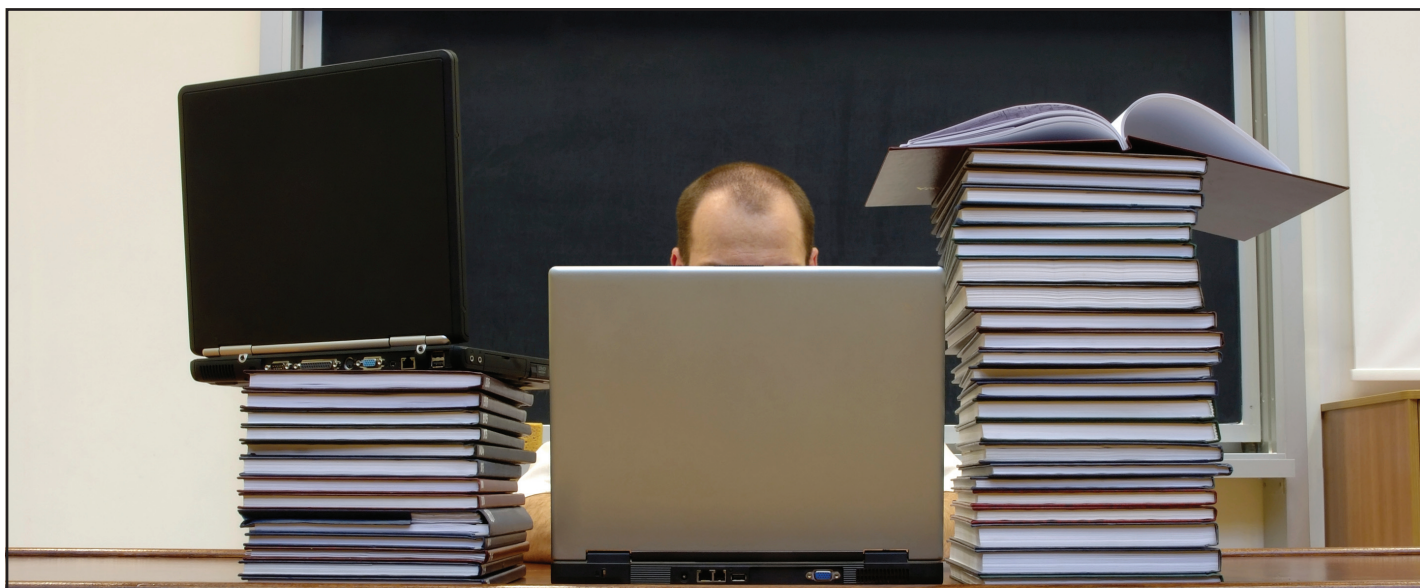
1726

Bis spin-labelled cyclodextrins

Victor Chechik* and Gabriela Ionita

Two isomers of permethylated β -cyclodextrin, labelled with paramagnetic TEMPO moieties attached on the same rim of the cavity, were synthesised and their host-guest properties investigated by EPR spectroscopy.





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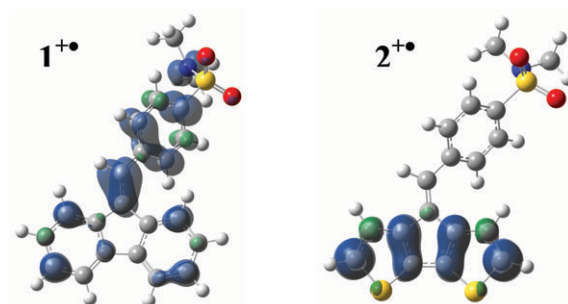


1730

Anodic behaviour of methyldene-cyclopentadienyl derivatives: cyclic voltammetry and theoretical study

Cécile Hubert, Khoa Tran, Fanny Hauquier, Charles Cougnon, Jean-François Pilard,* Pascal Gosselin,* Joëlle Rault-Berthelot and Eugène Raoult

The high electropolymerization ability of the cyclopentadithiophene derivative $2^{+\bullet}$ is associated with the localization of the spin density on the bithiophene part of the radical cation. Because of the lack of a well-localized spin density, the fluorene derivative $1^{+\bullet}$ failed to electropolymerize.

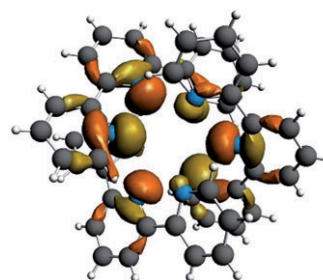


1738

DFT modeling of the relative affinity of nitrogen ligands for trivalent f elements: an energetic point of view

Laurence Petit, Claude Daul, Carlo Adamo and Pascale Maldivi*

DFT calculations are able to account for the experimental energetic trends observed in the relative affinities of Ce^{3+} and U^{3+} with tridentate N-heterocyclic ligands known for their selective properties towards trivalent actinides.

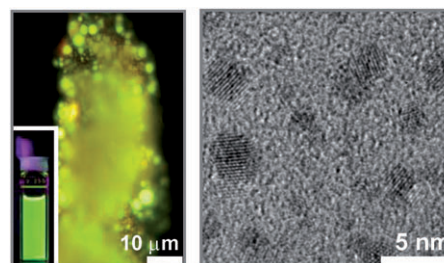


1746

Self-assembly of long-lived *cis*-azobenzenes into crystalline nanoparticles

Mina R. Han,* Daisuke Hashizume and Masahiko Hara

Simple UV light irradiation of a new type of long-lived *cis*-azobenzene drives the formation of strongly fluorescent and so far unknown *cis*-azobenzene nanocrystals which maintain highly stable optical properties such as absorbance spectrum and fluorescence efficiency over a long period.

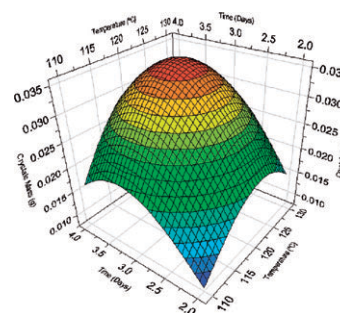


1751

Synthesis and optimization of experimental variables of a hybrid organic–inorganic compound

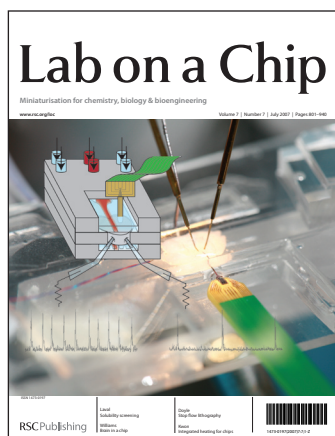
D. Contreras, Y. Moreno,* Y. Salgado, G. Cárdenas, R. Baggio, O. Peña and J. Y. Pivan

This work presents, through a multivariate study, the optimization of experimental variables for the hydrothermal synthesis of an organic–inorganic hybrid compound, $[Cu(biqui)(H_2PO_4)_2]$.



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Diastereoselective formation of luminescent dinuclear lanthanide(III) helicates with enantiomerically pure tartaric acid derived bis(β -diketonate) ligands

Markus Albrecht,* Sören Schmid, Sabrina Dehn, Claudia Wickleder, Shuang Zhang, Andrew P. Bassett, Zoe Pikramenou and Roland Fröhlich

Chiral bis(β -diketonate) ligands form triple- and quadruple-stranded dinuclear lanthanide(III) helicates that, in the cases of europium(III) and terbium(III), show bright visible luminescence.

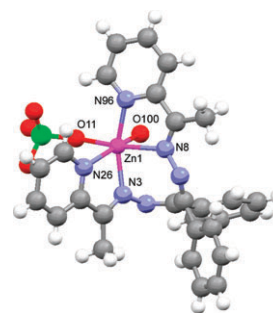


1763

A monoaqua zinc complex. Unique acid dissociation behaviour

Michael G. B. Drew, Debarati Parui, Senjuti De, Shubhamoy Chowdhury and Dipankar Datta*

The shown cationic zinc monoaqua complex loses the bound perchlorate anion upon deprotonation in solution undergoing a contraction in the metal coordination sphere.

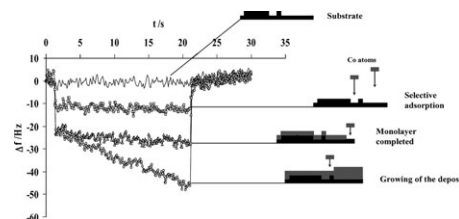


1769

Electromicrogravimetric study of underpotential deposition of Co on textured gold electrode in ammonia medium

Antonio Montes-Rojas,* Luz María Torres-Rodríguez and Cesar Nieto-Delgado

Schematic drawing of the Co UPD process on a gold substrate and its electromicrogravimetric response (Δf vs. t).

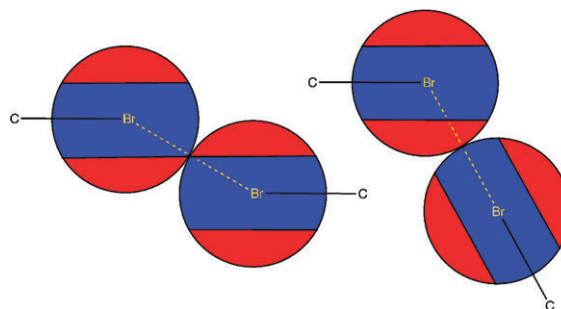


1777

Syntheses, crystal structures, optical limiting properties, and DFT calculations of three thiophene-2-aldazine Schiff base derivatives

Mohamed Ghazzali, Vratislav Langer, Cesar Lopes, Anders Eriksson and Lars Öhrström*

Br...Br interactions were found in the solid state structures of two bromo-substituted thiophene-2-aldazines and the type I and type II behaviour of aromatic bromide compounds in general were further investigated by analysis of the CSD.



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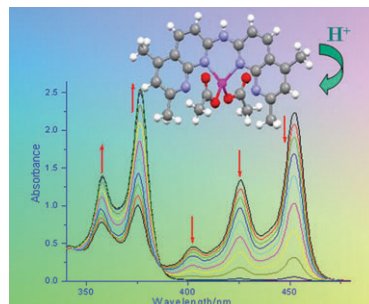


1785

Conformation impact on spectral properties of bis(5,7-dimethyl-1,8-naphthyridin-2-yl)amine and its Zn^{II} complex

Yong Chen, Wen-Fu Fu,* Jun-Li Li, Xi-Juan Zhao and Xue-Mei Ou

Bis(5,7-dimethyl-1,8-naphthyridin-2-yl)amine and its Zn^{II} complex were synthesized and characterized; the dual fluorescence and absorption of the compounds were related to a molecular conformational equilibrium.

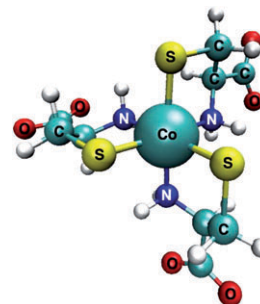


1789

A combined spectroscopic and theoretical approach to investigate structural properties of $\text{Co}(\text{II})/\text{Co}(\text{III})$ tris-cysteinato complexes in aqueous medium

Carole Bresson,* Riccardo Spezia,* Stéphane Esnouf, Pier Lorenzo Solari, Stéphanie Coantic and Christophe Den Auwer

Combined CPMD calculations and EXAFS data fitting are used to describe the cobalt coordination spheres in $\text{Co}(\text{III}):3\text{Cys}$ and $\text{Co}(\text{II}):3\text{Cys}$.

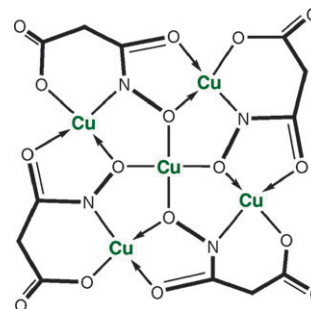


1798

A new $\text{Cu}(\text{II})$ [12]metallocrown-4 pentanuclear complex based on a $\text{Cu}(\text{II})$ -malonomonohydroxamic acid unit

Elzbieta Gumienna-Kontecka,* Irina A. Golenya, Nikolay M. Dudarenko, Agnieszka Dobosz, Matti Haukka, Igor O. Fritsky* and Jolanta Swiatek-Kozłowska

The first example of a $\text{Cu}(\text{II})$ [12]-MC-4 hydroxamic metallacrown compound containing a carboxyl group as a supporting donor function is described; the thermodynamic parameters determined in solution are supported by its crystal structure.

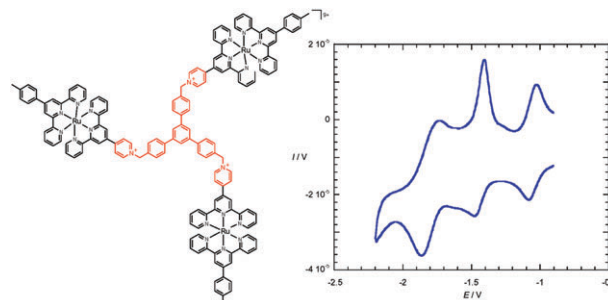


1806

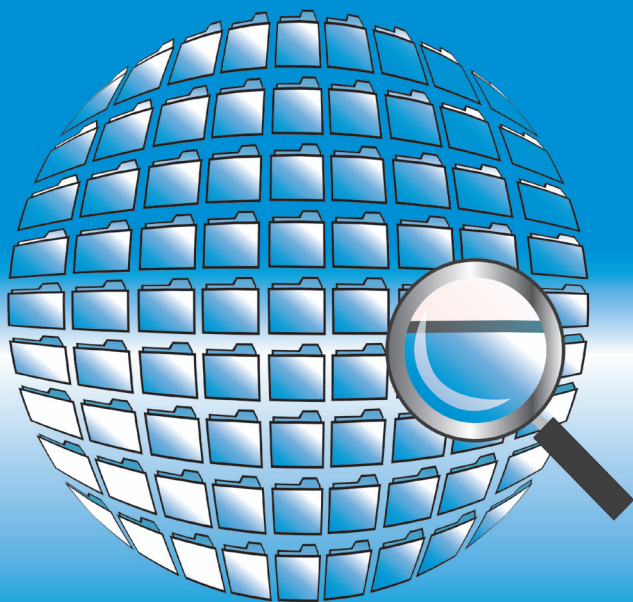
Facile synthesis and electrochemical properties of two trinuclear ruthenium complexes based on star-shaped terpyridine derivatives

Cédric R. Mayer,* Frédéric Dumur, Fabien Miomandre, Eddy Dumas, Thomas Devic, Céline Fosse and Francis Sécheresse

Synthesis and electrochemical properties of two star-shaped trinuclear ruthenium complexes based on 4'-(4-pyridyl)-2,2':6',2''-terpyridine are described.



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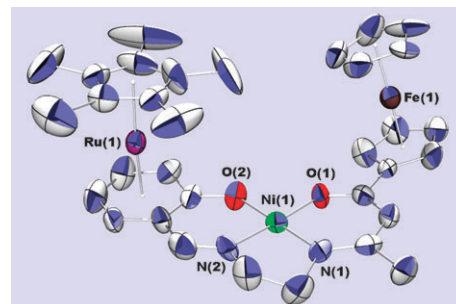


1815

Trinuclear π -conjugated chromophores formed by a neutral ferrocenyl group and a cationic mixed ruthenium sandwich linked through an unsymmetrical Schiff-base complex spacer

Mauricio Fuentealba, Jean-René Hamon,* David Carrillo and Carolina Manzur*

In trinuclear π -conjugated push–pull chromophores, Ru(II) and Fe(II) centres exhibit clearly a mutual donor–acceptor electronic interaction through the entire Ni(II) and Cu(II) Schiff base framework.

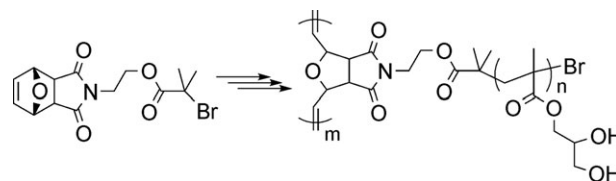


1826

Synthesis of graft copolymers from α -oxanorbornenyl macromonomers

Gaëlle Morandi, Giuseppe Mantovani, Véronique Montembault, David M. Haddleton and Laurent Fontaine*

Well-defined polyoxanorbornene-*g*-poly(glycerol methacrylate) copolymers, with number average molar mass of 24 000–37 000 g mol^{−1}, were synthesized *via* the “grafting through” strategy from α -oxanorbornenyl macromonomers.



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