

# ChemComm

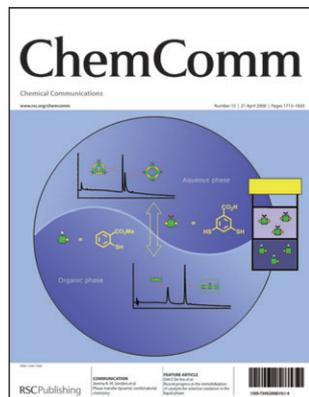
Chemical Communications

[www.rsc.org/chemcomm](http://www.rsc.org/chemcomm)

RSC Publishing is a not-for-profit publisher and a division of the Royal Society of Chemistry. Any surplus made is used to support charitable activities aimed at advancing the chemical sciences. Full details are available from [www.rsc.org](http://www.rsc.org)

## IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS (15) 1713-1820 (2008)



### Cover

See Jeremy K. M. Sanders *et al.*, pp. 1738–1740.

The diversity accessible in dynamic combinatorial libraries can be expanded by creating them in two phases under phase-transfer conditions. Image reproduced by permission of Ruth Pérez-Fernández, Michael Pittelkow, Ana M. Belenguer and Jeremy K. M. Sanders from *Chem. Commun.*, 2008, 1738.

## CHEMICAL SCIENCE

C25

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

## Chemical Science

April 2008/Volume 5/Issue 4

[www.rsc.org/chemicalscience](http://www.rsc.org/chemicalscience)

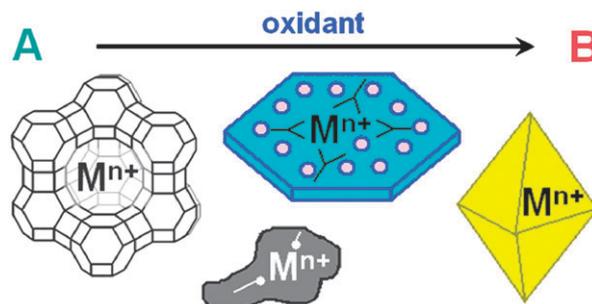
## FEATURE ARTICLE

1727

### Recent progress in the immobilization of catalysts for selective oxidation in the liquid phase

Luc Alaerts, Joos Wahlen, Pierre A. Jacobs and Dirk E. De Vos\*

Different types of immobilized oxidation catalysts are presented such as covalently bound, supported ionic liquid-phase and electrostatically withheld catalysts, coordination polymers and metal–organic frameworks.



## EDITORIAL STAFF

### Editor

Sarah Thomas

### Deputy editor

Kathryn Sear

### Assistant editors

Michael Brown, Rachel Davies, Emma Shiells,  
Joanne Thomson, Kathleen Too

### Publishing assistants

Jackie Cockrill, Jayne Gough

### Team leader, serials production

Helen Saxton

### Technical editors

Celia Clarke, Nicola Convine, Alan Holder,  
Laura Howes, Sandra Jones, David Parker

### Production administration coordinator

Sonya Spring

### Administration assistants

Clare Davies, Donna Fordham, Kirsty Lunnon,  
Julie Thompson

### Publisher

Janet Miles

Chemical Communications (print: ISSN 1359-7345; electronic: ISSN 1364-548X) is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF. All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to RSC Distribution Services, c/o Portland Customer Services, Commerce Way, Colchester, Essex, UK CO2 8HP. Tel +44 (0)1206 226050; E-mail sales@rscdistribution.org

2008 Annual (print + electronic) subscription price: £1951; US\$3882. 2008 Annual (electronic) subscription price: £1756; US\$3494. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT. If you take an institutional subscription to any RSC journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at [www.rsc.org/ip](http://www.rsc.org/ip). Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank. Periodicals postage paid at Rahway, NJ, USA and at additional mailing offices. Airfreight and mailing in the USA by Mercury Airfreight International Ltd., 365 Blair Road, Avenel, NJ 07001, USA. US Postmaster: send address changes to Chemical Communications, c/o Mercury Airfreight International Ltd., 365 Blair Road, Avenel, NJ 07001. All despatches outside the UK by Consolidated Airfreight. PRINTED IN THE UK

© The Royal Society of Chemistry, 2008. Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulations 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publisher or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA. The Royal Society of Chemistry takes reasonable care in the preparation of this publication but does not accept liability for the consequences of any errors or omissions. Inclusion of an item in this publication does not imply endorsement by The Royal Society of Chemistry of the content of the original documents to which that item refers.

# ChemComm

Chemical Communications

[www.rsc.org/chemcomm](http://www.rsc.org/chemcomm)

## EDITORIAL BOARD

### Chairman

Peter Kündig, Geneva, Switzerland  
[Peter.Kundig@chiorg.unige.ch](mailto:Peter.Kundig@chiorg.unige.ch)

### Associate Editors

Michael Doyle, Maryland, USA  
[chemcomm@umd.edu](mailto:chemcomm@umd.edu)  
Jonathan L. Sessler, Austin, USA  
[chemcomm@cm.utexas.edu](mailto:chemcomm@cm.utexas.edu)  
T. Don Tilley, Berkeley, USA  
[chemcomm@berkeley.edu](mailto:chemcomm@berkeley.edu)

### Members

Penny Brothers, Auckland, New Zealand  
[p.brothers@auckland.ac.nz](mailto:p.brothers@auckland.ac.nz)  
Jillian M. Buriak, Edmonton, Canada  
[jburiak@ualberta.ca](mailto:jburiak@ualberta.ca)  
P. Andrew Evans, Liverpool, UK  
[andrew.evans@liverpool.ac.uk](mailto:andrew.evans@liverpool.ac.uk)

Ben L. Feringa, Groningen, The Netherlands  
[feringa@chem.rug.nl](mailto:feringa@chem.rug.nl)  
David Haddleton, Warwick, UK  
[D.M.Haddleton@warwick.ac.uk](mailto:D.M.Haddleton@warwick.ac.uk)  
Mir Wais Hosseini, Strasbourg, France  
[hosseini@chimie.u-strasbg.fr](mailto:hosseini@chimie.u-strasbg.fr)  
Nazario Martín, Madrid, Spain  
[nazmar@quim.ucm.es](mailto:nazmar@quim.ucm.es)  
Keiji Maruoka, Kyoto, Japan  
[maruoka@kuchem.kyoto-u.ac.jp](mailto:maruoka@kuchem.kyoto-u.ac.jp)  
Ryong Ryoo, Taejeon, Korea  
[rryoo@kaist.ac.kr](mailto:rryoo@kaist.ac.kr)  
Ferdí Schüth, Mülheim, Germany  
[schueth@mpi-muelheim.mpg.de](mailto:schueth@mpi-muelheim.mpg.de)  
Nicholas J. Turner, Manchester, UK  
[nicholas.turner@manchester.ac.uk](mailto:nicholas.turner@manchester.ac.uk)

## ADVISORY BOARD

Varinder Aggarwal, Bristol, UK  
Frank Allen, CCDC, Cambridge, UK  
Jerry L. Atwood, Columbia, USA  
Amit Basak, Kharagpur, India  
Dario Braga, Bologna, Italy  
Xiao-Ming Chen, Guangzhou, China  
Derrick Clive, Alberta, Canada  
Marcella Darensbourg, College Station, USA  
Scott E. Denmark, Urbana, USA  
Kuiling Ding, Shanghai, China  
Shaojun Dong, Changchun, China  
Chris Easton, Canberra, Australia  
Gregory C. Fu, Cambridge, USA  
Tohru Fukuyama, Tokyo, Japan  
Alois Fürstner, Mülheim, Germany  
Lutz Gade, Heidelberg, Germany  
Philip Gale, Southampton, UK  
George W. Gokel, St Louis, USA  
Trevor Hambley, Sydney, Australia  
Craig Hawker, Santa Barbara, USA  
Andrew B. Holmes, Melbourne, Australia  
Amir Hoveyda, Boston, USA  
Steven M. Howdle, Nottingham, UK  
Taeghwan Hyeon, Seoul, Korea  
Biao Jiang, Shanghai, China  
Karl Anker Jørgensen, Aarhus, Denmark  
Kimoon Kim, Pohang, Korea

Susumu Kitagawa, Kyoto, Japan  
Shu Kobayashi, Tokyo, Japan  
Jérôme Lacour, Geneva, Switzerland  
Teck-Peng Loh, Singapore  
Tien-Yau Luh, Taipei, Taiwan  
Doug MacFarlane, Monash, Australia  
David MacMillan, Princeton, USA  
Seth Marder, Atlanta, USA  
Ilan Marek, Haifa, Israel  
E. W. 'Bert' Meijer, Eindhoven, The Netherlands  
Achim Müller, Bielefeld, Germany  
Catherine Murphy, South Carolina, USA  
Atsuhiko Osuka, Kyoto, Japan  
Ian Paterson, Cambridge, UK  
Maurizio Prato, Trieste, Italy  
C. N. R. Rao, Bangalore, India  
Christopher A. Reed, Riverside, USA  
Robin Rogers, Belfast, UK  
Michael Sailor, San Diego, USA  
Jonathan W. Steed, Durham, UK  
Zhong-Qun Tian, Xiamen, China  
Carsten Tschierske, Halle, Germany  
Herbert Waldmann, Dortmund, Germany  
Henry N. C. Wong, Hong Kong, China  
Eiji Yashima, Nagoya, Japan  
Xi Zhang, Beijing, China

**Advertisement sales:** Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017; E-mail [advertising@rsc.org](mailto:advertising@rsc.org)

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

Royal Society of Chemistry: Registered Charity No. 207890.

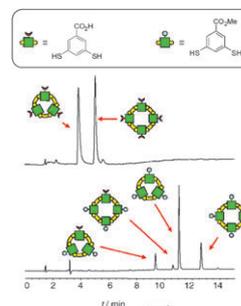
Authors may reproduce/republish portions of their published contribution without seeking permission from the RSC, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of The Royal Society of Chemistry.

1738

## Phase-transfer dynamic combinatorial chemistry

Ruth Pérez-Fernández, Michael Pittelkow,  
Ana M. Belenguer and Jeremy K. M. Sanders\*

The diversity accessible in dynamic combinatorial libraries can be expanded by creating them in two phases under phase-transfer conditions.

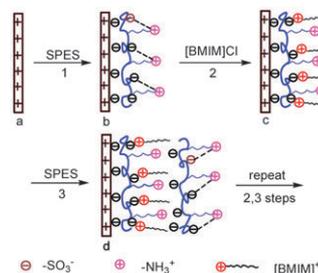


1741

## Layer-by-layer assembly of single-charged ions with a rigid polyampholyte

Guang Chen, Guojun Wu, Liming Wang, Suobo Zhang\*  
and Zhaohui Su\*

Single-charged ions are incorporated into multilayer films *via* direct electrostatic assembly with a rigid polyampholyte with unbalanced charges. The surface charges are generated *via* metathesis of an inner salt in the last assembled polyampholyte layer by the incoming ion, so that the subsequent polyampholyte chains can assemble.

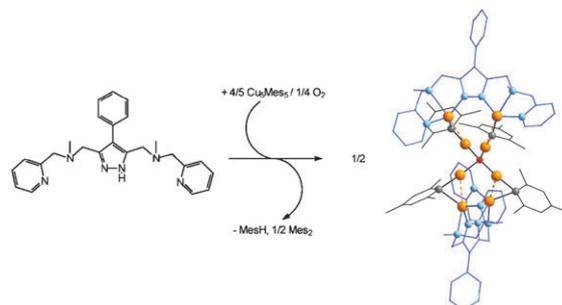


1744

An unusually stable octanuclear  $\sigma$ -mesityl-bridged  $\mu_4$ -oxo-copper(I) complex encapsulated by a pyrazolate-based compartmental ligand scaffold

Michael Stollenz, Christian Große and Franc Meyer\*

A new pyrazole-derived chelating ligand, mesitylcopper and dioxygen combine to form a remarkably stable organometallic framework that can be described as a heteroleptic O-centered cuprate anion  $[(\text{MesCu}^{\text{I}})_4(\mu_4\text{-O})]^{2-}$  linked *via*  $\sigma$ -mesityl-bridges to two binuclear  $\text{Cu}^{\text{I}}$ -pyrazolate clamps.

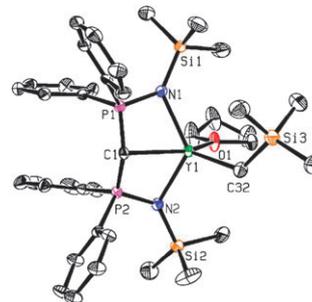


1747

## Synthesis and structural characterisation of an yttrium-alkyl-alkylidene

Stephen T. Liddle,\* Jonathan McMaster, Jennifer C. Green  
and Polly L. Arnold

The first structurally authenticated yttrium-alkyl-alkylidene is reported; structural, spectroscopic, and theoretical analyses show that whilst the yttrium-alkylidene bond is short, it possesses a bond order less than one and is comparable to the Y-C<sub>alkyl</sub> single bond within the same molecule.



# International Symposium on Homogeneous Catalysis, *ISHC-XVI*

Florence (Italy), July 6-11 2008

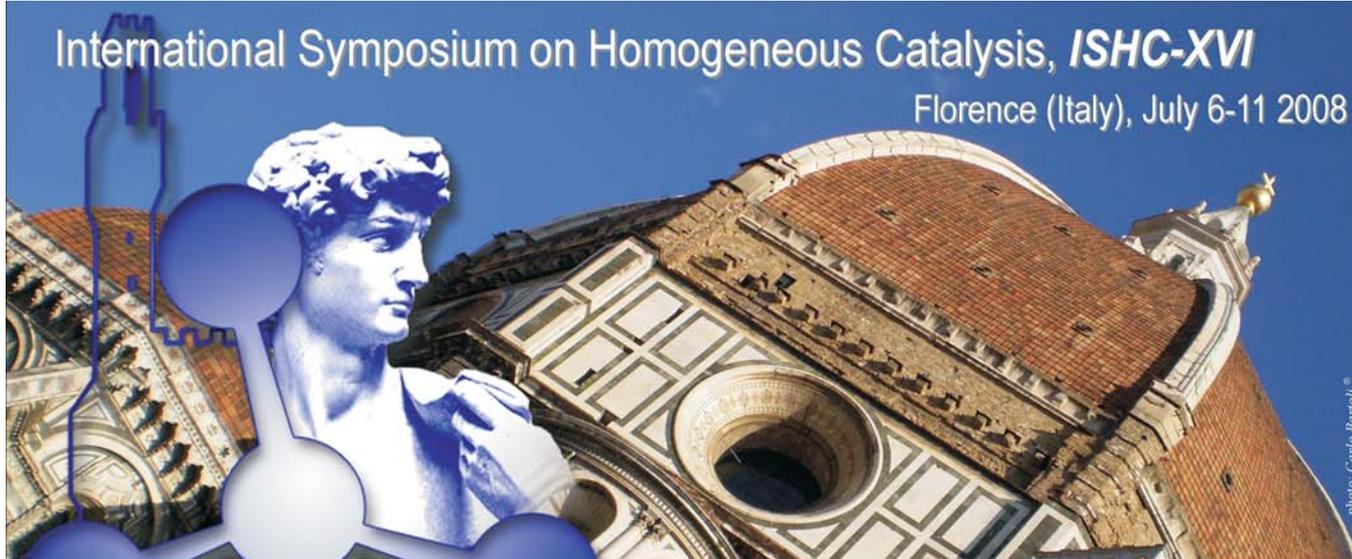


photo: Carlo Baroli®

**ISHC**  
Florence  
July 6-11 2008 **XVI**

INTERNATIONAL SYMPOSIUM ON HOMOGENEOUS CATALYSIS

The conference themes will cover most areas of homogeneous and single-site catalysis from ligand design and synthesis to mechanistic studies and modeling, asymmetric catalysis, olefin metathesis, enzymatic catalysis, oligomerization and polymerization and green chemistry, just to mention a few.

Selected lecturers will highlight the relationships existing between homogeneous and heterogeneous catalysis.

Particular emphasis will be devoted to sustainable catalytic processes involving renewable resources, with significant contributions from industry researchers.

## Contacts

**Claudio Bianchini** *Chairperson*  
claudio.bianchini@iccom.cnr.it

**Giuliano Giambastiani** *Scientific Secretary*  
giuliano.giambastiani@iccom.cnr.it

**NEWTOURS SpA** (*Giulia Franceschini*)  
Organizing Secretariat

[ishc16@newtours.it](mailto:ishc16@newtours.it) / [www.ishc16.it](http://www.ishc16.it)

## Keynote Lecturers

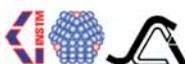
**Jean-Marie Basset**, *Villeurbanne, France*  
**Maurice S. Brookhart**, *Chapel Hill, NC, USA*  
**Vincenzo Busico**, *Napoli, Italy*  
**István T. Horváth**, *Budapest, Hungary*  
**Takao Ikariya**, *Tokyo, Japan*  
**Manfred T. Reetz**, *Mülheim an der Ruhr, Germany*  
**Richard R. Schrock**, *MIT, MS, USA*  
**Antonio Togni**, *Zürich, Switzerland*

## Invited Lecturers

**Irina P. Beletskaya**, *Moscow, Russia*  
**Matthias Beller**, *Rostock, Germany*  
**Juan Cámpora**, *Sevilla, Spain*  
**Raghunath V. Chaudhari**, *Pune, India*  
**Bruno Chaudret**, *Toulouse, France*  
**Chi-Ming Che**, *Hong Kong, China*  
**Cesare Gennari**, *Milano, Italy*  
**Susan Gibson**, *London, UK*  
**Mike Green**, *Sasolburg, South Africa*  
**Philip G. Jessop**, *Kingston, ON, Canada*  
**Alceo Macchioni**, *Perugia, Italy*  
**Bogdan Marciniak**, *Poznan, Poland*  
**Josef Michl**, *Boulder, CO, USA*  
**David Milstein**, *Rehovot, Israel*  
**Giovanni Poli**, *Paris, France*  
**Joost N.H. Reek**, *Amsterdam, The Netherlands*  
**Masato Tanaka**, *Yokohama, Japan*

*Consiglio Nazionale delle Ricerche*  
Dipartimento Progettazione Molecolare

 ENTE  
CASSA DI RISPARMIO  
DI FIRENZE

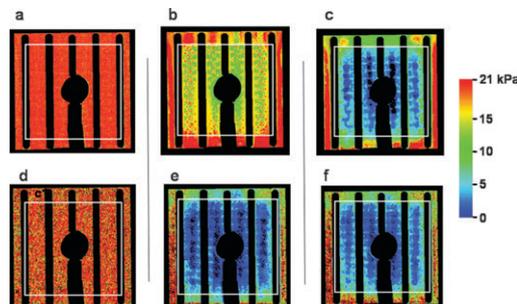


1750

**In situ and real-time visualisation of oxygen distribution in DMFC using a porphyrin dye compound**

Junji Inukai, Kenji Miyatake, Yuta Ishigami, Masahiro Watanabe,\* Tsuyoshi Hyakutake, Hiroyuki Nishide, Yuzo Nagumo, Masayuki Watanabe and Akira Tanaka

Oxygen distribution in an operating direct methanol fuel cell (DMFC) is visualised by applying a luminescent porphyrin dye film onto a transparent cathode separator, revealing oxygen consumption *via* electrochemical reaction and combustion of crossed-over methanol.

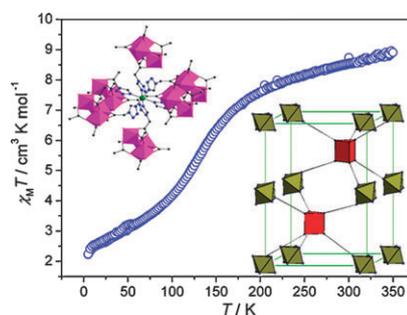


1753

**Pressure effects and Mössbauer spectroscopic studies on a 3D mixed-valence iron spin-crossover complex with NiAs topology**

Yue-Ling Bai, Jun Tao,\* Rong-Bin Huang, Lan-Sun Zheng, Shao-Liang Zheng,\* Kazuyoshi Oshida and Yasuaki Einaga\*

$[(\text{Fe}^{\text{III}}_3\text{O})\text{Fe}^{\text{II}}(\text{TA})_6(\text{H}_2\text{O})_3] \cdot (\text{ClO}_4)_2(\text{NO}_3)(\text{EtOH})(\text{H}_2\text{O})_2$  (**1**, HTA = tetrazole-1*H*-acetic acid), shows spin-crossover behavior that was characterized *via* VT crystal structures, Mössbauer spectra, magnetic susceptibility and pressure studies.

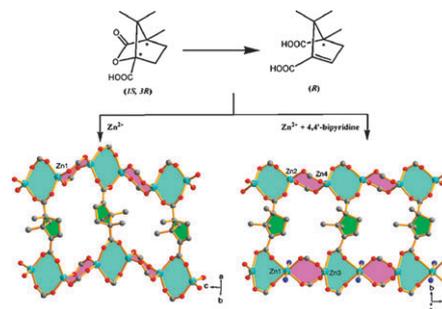


1756

**A new enantiopure unsaturated dicarboxylate as a 4-connected unit in a flexible homochiral PtS-type framework**

Jian Zhang and Xianhui Bu\*

Metal cation mediated chiral ligand transformation of (*S*)-camphanic acid leads to a new enantiopure unsaturated dicarboxylate that links tetrahedral  $\text{Zn}^{2+}$  sites into 3-D homochiral 4-connected PtS-type framework structures,  $\text{Zn}(\text{tced})$  (**1**,  $\text{H}_2\text{tced}$  = 1,2,2-trimethylcyclopent-3-ene-1,3-dicarboxylic acid) and  $\text{Zn}_4(\text{tced})_4(4,4'\text{-bipy})$  (**2**).

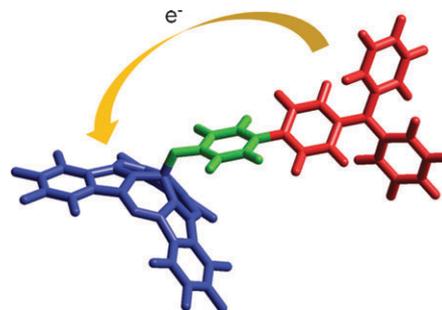


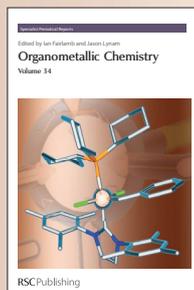
1759

**Accelerating charge transfer in a triphenylamine-subphthalocyanine donor-acceptor system**

Anais Medina, Christian G. Claessens, G. M. Aminur Rahman, Al Mokhtar Lamsabhi, Otilia Mó, Manuel Yáñez,\* Dirk M. Guldi\* and Tomás Torres\*

A donor-acceptor dyad incorporating a dodecafluoro-subphthalocyaninato boron(III) unit covalently linked in its axial position to a triphenylamine moiety was synthesized and its photophysical and electrochemical properties studied.





## Major Reference Works from RSC Publishing

Organometallic Chemistry Volume 34 provides systematic and critical review coverage in major areas of chemical research. Compiled by leading authorities in the relevant subject, the series creates a unique service for the active research chemist with regular critical in-depth accounts of progress in organometallic chemistry.

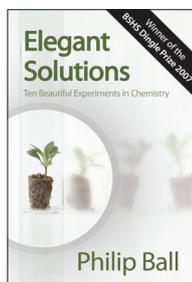
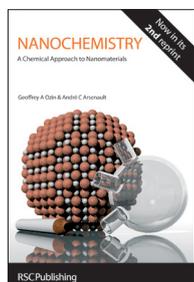
**Volume 34 covers literature published up to January 2006**

Organometallic Chemistry Volume 34  
Scientific Editors: *IJS Fairlamb* and *JM Lynam*  
2007 | ca 450 | 9780854043538 | £279.95

RSC Publishing

[www.rsc.org/spr](http://www.rsc.org/spr)

Registered Charity Number 207890



# 35% discount

on books for RSC members

The RSC offers a wide range of titles, including;

- Popular science
- Text books
- Educational books
- High level monographs

RSC Publishing

[www.rsc.org/books](http://www.rsc.org/books)

Registered Charity Number 207890



## Open the door to the best multidisciplinary chemical science ...

### ChemComm

Three-page communications in weekly issues

[www.rsc.org/chemcomm](http://www.rsc.org/chemcomm)

### NJC

New Journal of Chemistry - for full papers, published monthly

[www.rsc.org/njc](http://www.rsc.org/njc)

### ChemSocRev

Highly cited, engaging reviews, every month

[www.rsc.org/chemsocrev](http://www.rsc.org/chemsocrev)

Registered Charity Number 207890

RSC Publishing

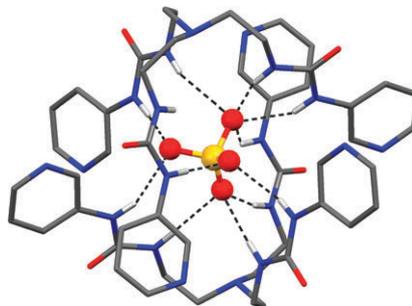
[www.rsc.org/publishing](http://www.rsc.org/publishing)

1762

### Sulfate ion encapsulation in caged supramolecular structures assembled by second-sphere coordination

Biao Wu,\* Jianjun Liang, Jin Yang, Chuandong Jia, Xiao-Juan Yang, Hongrui Zhang, Ning Tang and Christoph Janiak

Sulfate anion is encapsulated in a caged structure formed by a tripodal tris(3-pyridylurea) receptor with  $[M(H_2O)_6]^{2+}$  cations *via* second-sphere coordination.

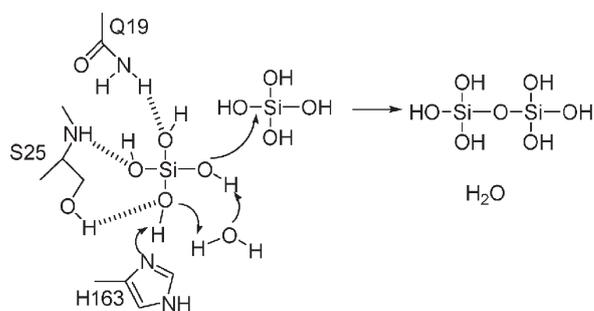


1765

### Crystal structure and silica condensing activities of silicatein $\alpha$ -cathepsin L chimeras

Michael Fairhead, Kenneth A. Johnson, Thomas Kowatz, Stephen A. McMahon, Lester G. Carter, Muse Oke, Huanting Liu, James H. Naismith\* and Christopher F. van der Walle\*

The chemical mechanism proposed to operate for the polymerisation of silicic acid by silicatein  $\alpha$ -cathepsin L chimeras.

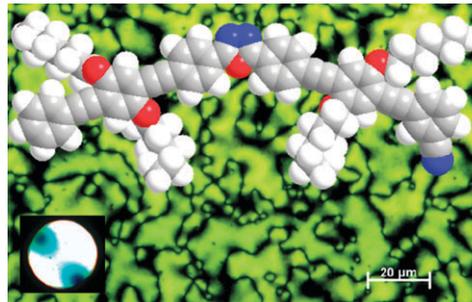


1768

### Synthesis and properties of oxadiazole based V-shaped, shape persistent nematogens

Matthias Lehmann,\* Christiane Köhn, Horst Kresse and Zinaida Vakhovskaya

A series of biaxial V-shaped, shape persistent molecules has been synthesised by stepwise coupling of phenylene ethynylene arms to an oxadiazole bending unit. Studies of their thermotropic nematic phases point to phase biaxiality.

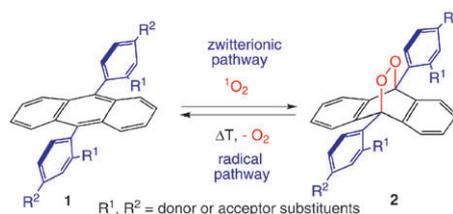


1771

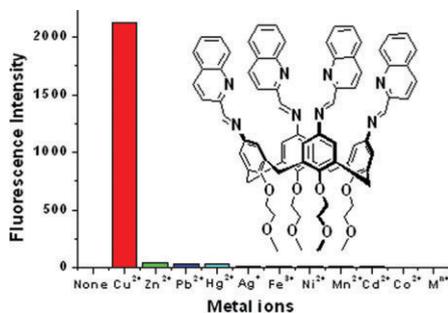
### Remote substituent effects on the photooxygenation of 9,10-diarylanthracenes: strong evidence for polar intermediates

Werner Fudickar and Torsten Linker\*

From polar intermediates to radicals. This mechanistic change was supported by remote substituent effects during the reaction of singlet oxygen with 9,10-diarylanthracenes **1** and thermolysis of the corresponding endoperoxides **2**. Thus, the principle of microreversibility is not fulfilled for such photooxygenations.



1774

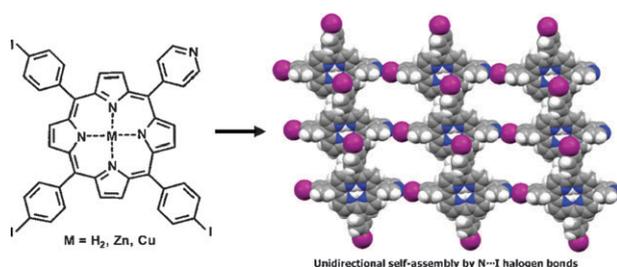


### A highly efficient and selective turn-on fluorescent sensor for $\text{Cu}^{2+}$ ion based on calix[4]arene bearing four iminoquinoline subunits on the upper rim

Guang-Ke Li, Zhen-Xiang Xu, Chuan-Feng Chen\* and Zhi-Tang Huang\*

A new fluorescent chemosensor based on calix[4]arene bearing four iminoquinoline subunits on the upper rim showed a remarkable enhanced fluorescent intensity in the presence of  $\text{Cu}^{2+}$  ion and a high selectivity toward  $\text{Cu}^{2+}$  ion over a wide range of tested metal ions in acetonitrile.

1777

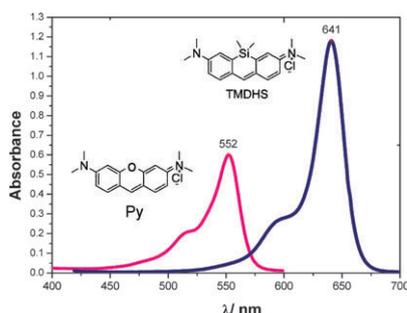


### Rational design of supramolecular chirality in porphyrin assemblies: the halogen bond case

Sankar Muniappan, Sophia Lipstman and Israel Goldberg\*

The rational design of tetraarylporphyrin-based non-centrosymmetric supramolecular structures requires asymmetric substitution of the porphyrin scaffold with molecular recognition functions that can be involved in intermolecular directional non-covalent bonds, such as halogen bonds.

1780

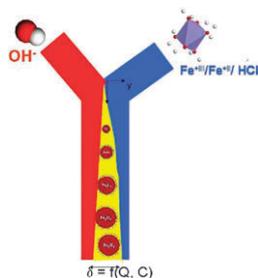


### A design concept of long-wavelength fluorescent analogs of rhodamine dyes: replacement of oxygen with silicon atom

Meiyan Fu, Yi Xiao,\* Xuhong Qian,\* Defeng Zhao and Yufang Xu

Replacement of the oxygen with a silicon atom on the rhodamine framework produces a strong red-emission fluorophore which has a high molar extinction coefficient and 90 nm red shift relative to rhodamine dye PY.

1783



### Synthesis of iron oxide nanoparticles in a microfluidic device: preliminary results in a coaxial flow millichannel

Ali Abou Hassan,\* Olivier Sandre, Valérie Cabuil and Patrick Tabeling

The synthesis of stable and magnetic colloidal iron oxide nanoparticles by coprecipitation of  $\text{Fe(II)}$  and  $\text{Fe(III)}$  by TMAOH in a millichannel is described.

1786

### Functionalized polyesters from organocatalyzed ROP of gluOCA, the *O*-carboxyanhydride derived from glutamic acid

Olivier Thillaye du Boullay, Colin Bonduelle, Blanca Martin-Vaca\* and Didier Bourissou\*

Well-controlled poly( $\alpha$ -hydroxyacids) featuring pendant carboxylic acid groups were prepared under mild conditions via DMAP-catalyzed ROP of the *O*-carboxyanhydrides derived from glutamic and lactic acids

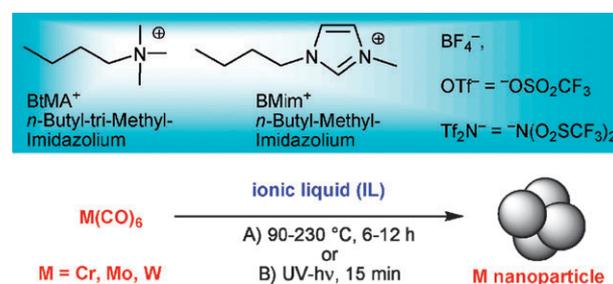


1789

### Use of ionic liquids (ILs) for the IL-anion size-dependent formation of Cr, Mo and W nanoparticles from metal carbonyl $\text{M}(\text{CO})_6$ precursors

Engelbert Redel, Ralf Thomann and Christoph Janiak\*

Stable metal nanoparticles are obtained reproducibly without stabilizers from metal carbonyl precursors in ILs with a very small and uniform size of  $\sim 1.5$  nm for  $\text{BMim}^+\text{BF}_4^-$  (characterization by TEM, TED and dynamic light scattering).

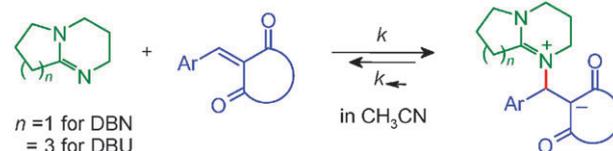


1792

### Nucleophilicities and carbon basicities of DBU and DBN

M. Baidya and Herbert Mayr\*

A combination of rate and equilibrium studies shows that the order of nucleophilicities ( $\text{DMAP} < \text{DBU} < \text{DBN} < \text{DABCO}$ ) deviates dramatically from the order of Lewis basicities towards  $\text{C}_{\text{sp}^2}$  centers ( $\text{DABCO} < \text{DMAP} < \text{DBU} < \text{DBN}$ ).

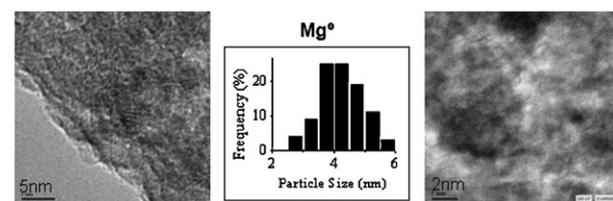


1795

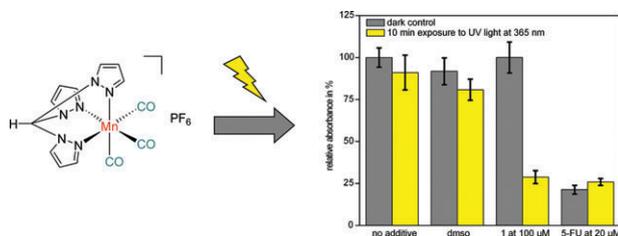
### Synthesis of metallic magnesium nanoparticles by sonoelectrochemistry

Iris Haas and Aharon Gedanken\*

4 nm sized particles of metallic magnesium were synthesized using the sonoelectrochemical method.



1798

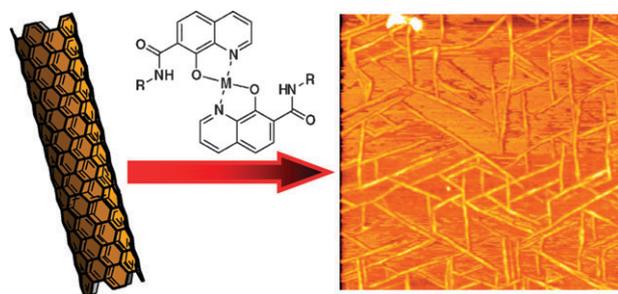


### Photoinduced CO release, cellular uptake and cytotoxicity of a tris(pyrazolyl)methane (tpm) manganese tricarbonyl complex

Johanna Niesel, Antonio Pinto, Harmel W. Peindy N'Dongo, Klaus Merz, Ingo Ott, Ronald Gust and Ulrich Schatzschneider\*

The manganese tricarbonyl complex [Mn(tpm)(CO)<sub>3</sub>]PF<sub>6</sub> is efficiently internalized in HT-29 human colon cancer cells and shows a photoinduced cytotoxicity comparable to 5-fluorouracil (5-FU).

1801

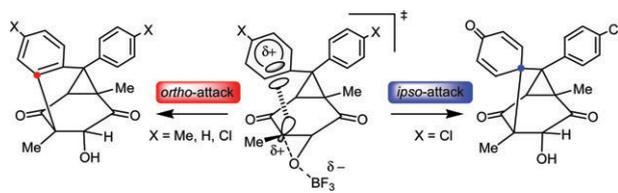


### Angle-controlled arrangement of single-walled carbon nanotubes solubilised by 8-quinolinol metal chelate derivatives on mica

Kazuyuki Nobusawa, Atsushi Ikeda,\* Yasunori Tanaka, Mineo Hashizume, Jun-ichi Kikuchi, Michihiro Shirakawa, Tatsuya Kitahara, Norifumi Fujita and Seiji Shinkai

The solubilised complexes between short length SWNTs and chelates formed a network structure on mica.

1804

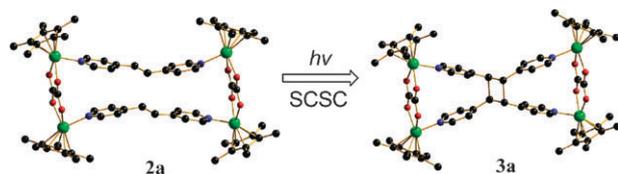


### Mechanistic evidence for remote $\pi$ -aryl participation in acid-catalyzed ring opening of homobenzoquinone epoxides

Takumi Oshima,\* Haruyasu Asahara, Takuya Koizumi and Saki Miyamoto

The acid-induced reaction of bis(*p*-chlorophenyl)-homobenzoquinone epoxide gave the dual *ipso/ortho* intramolecular S<sub>E</sub>2-Ar products associated with  $\pi$ -aryl participated regioselective oxirane ring-opening.

1807



### Template-controlled topochemical photodimerization based on "organometallic macrocycles" through single-crystal to single-crystal transformation

Ying-Feng Han, Yue-Jian Lin, Wei-Guo Jia, Guo-Liang Wang and Guo-Xin Jin\*

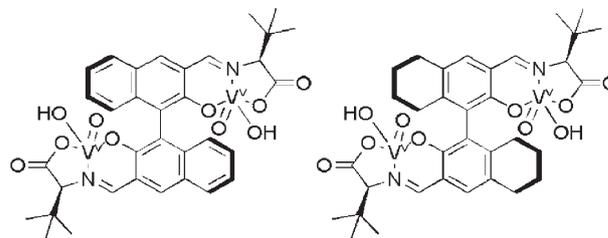
Organometallic macrocycle 2a undergoes [2 + 2] photochemical cycloaddition to form 3a in quantitative yield, accompanied by a single-crystal to single-crystal transformation. (Ir or Rh: green, N: blue, O: red, C: black).

1810

**Chiral dinuclear vanadium(v) catalysts for oxidative coupling of 2-naphthols**

Shinobu Takizawa, Tomomi Katayama, Chiaki Kameyama, Kiyotaka Onitsuka, Takeyuki Suzuki, Takeshi Yanagida, Tomoji Kawai and Hiroaki Sasai\*

Preparation and structural analysis of chiral dinuclear vanadium(v) catalysts with high catalytic activity for the oxidative coupling of 2-naphthols are described.

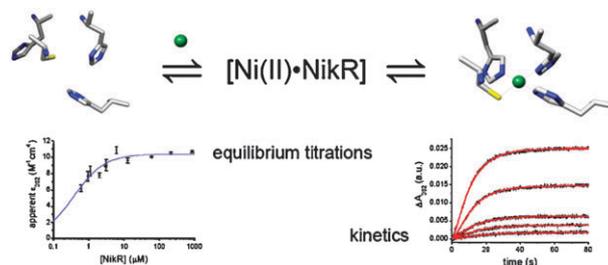


1813

**Sub-micromolar affinity of *Escherichia coli* NikR for Ni(II)**

Rutger E. M. Diederix,\* Caroline Fauquant, Agnès Rodrigue, Marie-Andrée Mandrand-Berthelot and Isabelle Michaud-Soret\*

Equilibrium and time-dependent binding studies of Ni(II) binding by *Escherichia coli* NikR indicate sub-micromolar affinity, five orders of magnitude higher than previously thought.

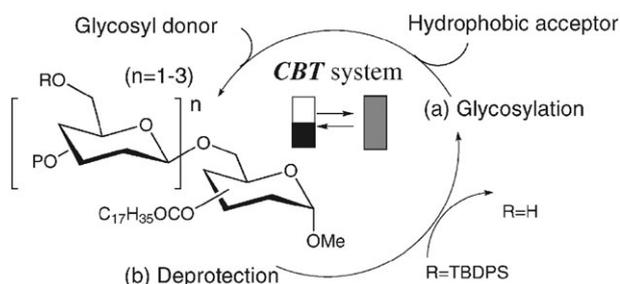


1816

**Solution-phase oligosaccharide synthesis in a cycloalkane-based thermomorphic system**

Shokaku Kim, Ai Tsuruyama, Akihiro Ohmori and Kazuhiro Chiba\*

The cycloalkane-based thermomorphic (CBT) system is a convenient and practical method for oligosaccharide synthesis, and hydrophobically modified oligosaccharides have a remarkable affinity for CBT solutions composed of methylcyclohexane and propionitrile.



## AUTHOR INDEX

- Abou Hassan, Ali, 1783  
 Alaerts, Luc, 1727  
 Arnold, Polly L., 1747  
 Asahara, Haruyasu, 1804  
 Bai, Yue-Ling, 1753  
 Baidya, M., 1792  
 Belenguer, Ana M., 1738  
 Bonduelle, Colin, 1786  
 Bourissou, Didier, 1786  
 Bu, Xianhui, 1756  
 Cabuil, Valérie, 1783  
 Carter, Lester G., 1765  
 Chen, Chuan-Feng, 1774  
 Chen, Guang, 1741  
 Chiba, Kazuhiro, 1816  
 Claessens, Christian G., 1759  
 De Vos, Dirk E., 1727  
 Diederix, Rutger E. M., 1813  
 Einaga, Yasuaki, 1753  
 Fairhead, Michael, 1765  
 Fauquant, Caroline, 1813  
 Fu, Meiyang, 1780  
 Fudickar, Werner, 1771  
 Fujita, Norifumi, 1801  
 Gedanken, Aharon, 1795  
 Goldberg, Israel, 1777  
 Green, Jennifer C., 1747  
 Große, Christian, 1744  
 Guldi, Dirk M., 1759  
 Gust, Ronald, 1798  
 Haas, Iris, 1795  
 Han, Ying-Feng, 1807  
 Hashizume, Mineo, 1801  
 Huang, Rong-Bin, 1753  
 Huang, Zhi-Tang, 1774  
 Hyakutake, Tsuyoshi, 1750  
 Ikeda, Atsushi, 1801  
 Inukai, Junji, 1750  
 Ishigami, Yuta, 1750  
 Jacobs, Pierre A., 1727  
 Janiak, Christoph, 1762, 1789  
 Jia, Chuandong, 1762  
 Jia, Wei-Guo, 1807  
 Jin, Guo-Xin, 1807  
 Johnson, Kenneth A., 1765  
 Kameyama, Chiaki, 1810  
 Katayama, Tomomi, 1810  
 Kawai, Tomoji, 1810  
 Kikuchi, Jun-ichi, 1801  
 Kim, Shokaku, 1816  
 Kitahara, Tatsuya, 1801  
 Köhn, Christiane, 1768  
 Koizumi, Takuya, 1804  
 Kowatz, Thomas, 1765  
 Kresse, Horst, 1768  
 Lamsabhi, Al Mokhtar, 1759  
 Lehmann, Matthias, 1768  
 Li, Guang-Ke, 1774  
 Liang, Jianjun, 1762  
 Liddle, Stephen T., 1747  
 Lin, Yue-Jian, 1807  
 Linker, Torsten, 1771  
 Lipstman, Sophia, 1777  
 Liu, Huanting, 1765  
 Mandrand-Berthelot, Marie-Andrée, 1813  
 Martin-Vaca, Blanca, 1786  
 Mayr, Herbert, 1792  
 McMahon, Stephen A., 1765  
 McMaster, Jonathan, 1747  
 Medina, Anaïs, 1759  
 Merz, Klaus, 1798  
 Meyer, Franc, 1744  
 Michaud-Soret, Isabelle, 1813  
 Miyamoto, Saki, 1804  
 Miyatake, Kenji, 1750  
 Mó, Otilia, 1759  
 Muniappan, Sankar, 1777  
 Nagumo, Yuzo, 1750  
 Naismith, James H., 1765  
 Niesel, Johanna, 1798  
 Nishide, Hiroyuki, 1750  
 Nobusawa, Kazuyuki, 1801  
 Ohmori, Akihiro, 1816  
 Oke, Muse, 1765  
 Onitsuka, Kiyotaka, 1810  
 Oshida, Kazuyoshi, 1753  
 Oshima, Takumi, 1804  
 Ott, Ingo, 1798  
 Peindy N'Dongo, Harmel W., 1798  
 Pérez-Fernández, Ruth, 1738  
 Pinto, Antonio, 1798  
 Pittelkow, Michael, 1738  
 Qian, Xuhong, 1780  
 Rahman, G. M. Aminur, 1759  
 Redel, Engelbert, 1789  
 Rodrigue, Agnès, 1813  
 Sanders, Jeremy K. M., 1738  
 Sandre, Olivier, 1783  
 Sasai, Hiroaki, 1810  
 Schatzschneider, Ulrich, 1798  
 Shinkai, Seiji, 1801  
 Shirakawa, Michihiro, 1801  
 Stollenz, Michael, 1744  
 Su, Zhaohui, 1741  
 Suzuki, Takeyuki, 1810  
 Tabeling, Patrick, 1783  
 Takizawa, Shinobu, 1810  
 Tanaka, Akira, 1750  
 Tanaka, Yasunori, 1801  
 Tang, Ning, 1762  
 Tao, Jun, 1753  
 Thillaye du Boullay, Olivier, 1786  
 Thomann, Ralf, 1789  
 Torres, Tomás, 1759  
 Tsuruyama, Ai, 1816  
 Vakhovskaya, Zinaida, 1768  
 van der Walle, Christopher F., 1765  
 Wahlen, Joos, 1727  
 Wang, Guo-Liang, 1807  
 Wang, Liming, 1741  
 Watanabe, Masahiro, 1750  
 Watanabe, Masayuki, 1750  
 Wu, Biao, 1762  
 Wu, Guojun, 1741  
 Xiao, Yi, 1780  
 Xu, Yufang, 1780  
 Xu, Zhen-Xiang, 1774  
 Yanagida, Takeshi, 1810  
 Yáñez, Manuel, 1759  
 Yang, Jin, 1762  
 Yang, Xiao-Juan, 1762  
 Zhang, Hongrui, 1762  
 Zhang, Jian, 1756  
 Zhang, Suobo, 1741  
 Zhao, Defeng, 1780  
 Zheng, Lan-Sun, 1753  
 Zheng, Shao-Liang, 1753

## FREE E-MAIL ALERTS AND RSS FEEDS

Contents lists in advance of publication are available on the web via [www.rsc.org/chemcomm](http://www.rsc.org/chemcomm) – or take advantage of our free e-mail alerting service ([www.rsc.org/ej\\_alert](http://www.rsc.org/ej_alert)) to receive notification each time a new list becomes available.

 Try our RSS feeds for up-to-the-minute news of the latest research. By setting up RSS feeds, preferably using feed reader software, you can be alerted to the latest Advance Articles published on the RSC web site. Visit [www.rsc.org/publishing/technology/rss.asp](http://www.rsc.org/publishing/technology/rss.asp) for details.

## ADVANCE ARTICLES AND ELECTRONIC JOURNAL

Free site-wide access to Advance Articles and the electronic form of this journal is provided with a full-rate institutional subscription. See [www.rsc.org/ejs](http://www.rsc.org/ejs) for more information.

\* Indicates the author for correspondence: see article for details.

 Electronic supplementary information (ESI) is available via the online article (see <http://www.rsc.org/esi> for general information about ESI).