ChemComm

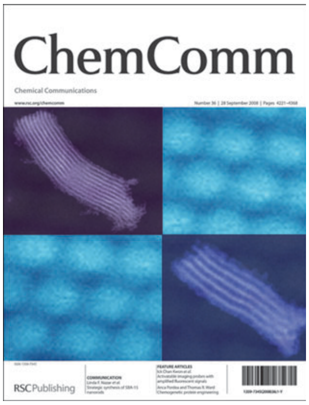
Chemical Communications

www.rsc.org/chemcomm

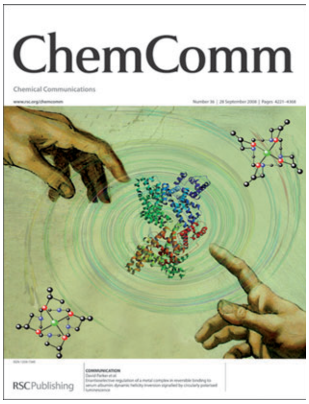
RSC Publishing is a not-for-profit publisher and a division of the Royal Society of Chemistry. Any surplus made is used to support charitable activities aimed at advancing the chemical sciences. Full details are available from www.rsc.org

IN THIS ISSUE

ISSN 1359–7345 CODEN CHCOFS (36) 4221–4368 (2008)



Cover
See Linda F. Nazar *et al.*,
pp. 4288–4290.
TEM images of nanodimensioned mesoporous silica, that typically span less than 10 porous channels in width.
Image reproduced by permission of Xiulei Ji, Kyu T. Lee, Muguette Monjauze and Linda F. Nazar from *Chem. Commun.*, 2008, 4288.



Inside cover
See David Parker *et al.*,
pp. 4261–4263.
A chiral lanthanide complex inverts helicity on binding to serum albumin, signalled by a change in the sign of the circularly polarised emission.
Image reproduced by permission of Craig P. Montgomery, Elizabeth J. New, David Parker and Robert D. Peacock from *Chem. Commun.*, 2008, 4261.

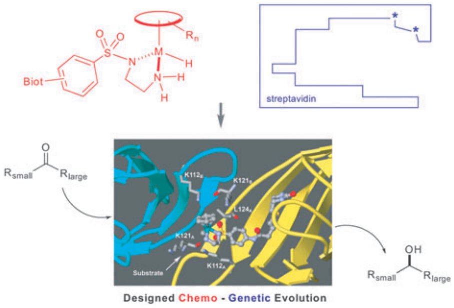
FEATURE ARTICLES

4239

Chemogenetic protein engineering: an efficient tool for the optimization of artificial metalloenzymes

Anca Pordea and Thomas R. Ward*

Artificial metalloenzymes lie at the interface between organometallic and enzymatic catalysis and have an immense optimization potential, which combines chemical and genetic methods to screen diversity space. This article describes the process of the creation and optimization of artificial transfer hydrogenases based on the biotin-streptavidin technology.

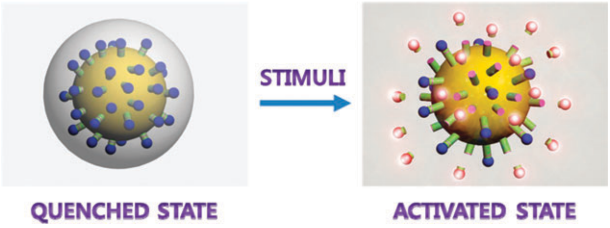


4250

Activatable imaging probes with amplified fluorescent signals

Seulki Lee, Kyeongsoon Park, Kwangmeyung Kim, Kuiwon Choi and Ick Chan Kwon*

This feature article introduces and discusses the various approaches described by the term "fluorescent signal activation methods" with respect to their unique imaging probe design strategies and applications.



ChemComm

Chemical Communications

www.rsc.org/chemcomm

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
Caroline Moore

Technical editors
Celia Clarke, Nicola Convine, Bailey Fallon, Alan Holder, Laura Howes, Sandra Jones, David Parker

Production administration coordinator
Sonya Spring

Administration assistants
Delailah Cromack, 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. 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.

EDITORIAL BOARD

Chairman
Peter Kündig, Geneva, Switzerland
Peter.Kundig@chiorg.unige.ch

Associate Editors
Michael Doyle, Maryland, USA
chemcomm@umd.edu
Jonathan L. Sessler, Austin, USA
chemcommun@cm.utexas.edu
T. Don Tilley, Berkeley, USA
chemcomm@berkeley.edu

Members
Penny Brothers, Auckland, New Zealand
p.brothers@auckland.ac.nz
Jillian M. Buriak, Edmonton, Canada
jburiak@ualberta.ca
P. Andrew Evans, Liverpool, UK
andrew.evans@liverpool.ac.uk
Ben L. Feringa, Groningen. The Netherlands
feringa@chem.rug.nl
David Haddleton, Warwick, UK
D.M.Haddleton@warwick.ac.uk
Mir Wais Hosseini, Strasbourg, France
hosseini@chimie.u-strasbg.fr
Nazario Martín, Madrid, Spain
nazmar@quim.ucm.es
Keiji Maruoka, Kyoto, Japan
maruoka@kuchem.kyoto-u.ac.jp
Ryong Ryoo, Taejon, Korea
rryoo@kaist.ac.kr
Ferdi Schüth, Mülheim, Germany
schueth@mpi-muelheim.mpg.de
Nicholas J. Turner, Manchester, UK
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
Marcetta 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, Shanghai, China
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
Atsuhiro 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
Li-Jun Wan, Beijing, China
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

♾ 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.

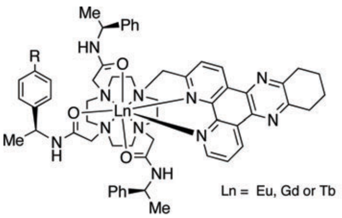
Authors may reproduce/republish portions of their published contribution without seeking permission from the RSC, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of The Royal Society of Chemistry.

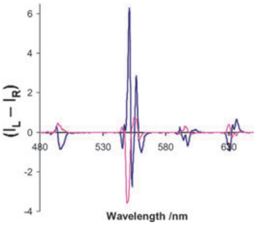
4261

Enantioselective regulation of a metal complex in reversible binding to serum albumin: dynamic helicity inversion signalled by circularly polarised luminescence

Craig P. Montgomery, Elizabeth J. New, David Parker* and Robert D. Peacock

The helicity of the (*SSS*)-Δ enantiomer of Tb and Eu(III) complexes switches on reversible binding to 'drug site II' of serum albumin and is signalled by inversion of the circular polarisation of emitted light.



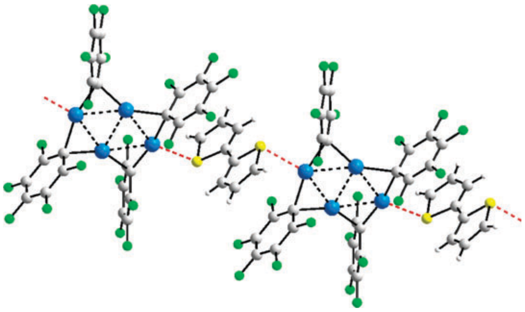


4264

Binary stacks of $[CuC_6F_5]_4$ with arenes

Ami Doshi, Krishnan Venkatasubbaiah, Arnold L. Rheingold and Frieder Jäkle*

The organocopper tetramer $[CuC_6F_5]_4$ assembles into novel luminescent binary stacks with naphthalene and 2,2′-bithiophene, respectively. Crystallographic data suggest that this supramolecular assembly process is supported by Cu–π, Cu–S, and perfluoroarene–arene π-interactions.

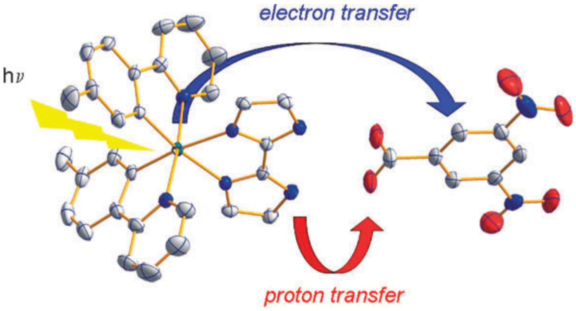


4267

Proton-coupled electron transfer from a luminescent excited state

Jonathan C. Freys, Gérald Bernardinelli and Oliver S. Wenger*

A luminescent hydrogen-bonded cation/anion pair is identified as a useful model system for light-triggered proton-coupled electron transfer reactions.

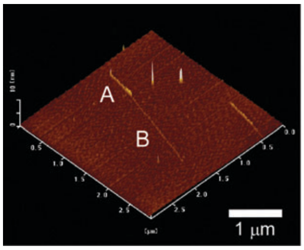


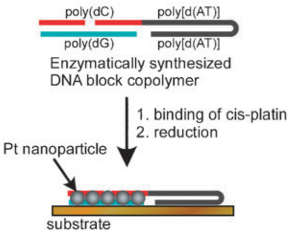
4270

Sequence-specifically platinum metal deposition on enzymatically synthesized DNA block copolymer

Aya Tanaka, Yasutaka Matsuo, Yuichi Hashimoto and Kuniharu Ijiro*

Platinum metal was sequence-specifically deposited on the DNA block copolymer synthesized by the Klenow fragment of *E. coli* DNA polymerase I (3′–5′ exonuclease deficient).





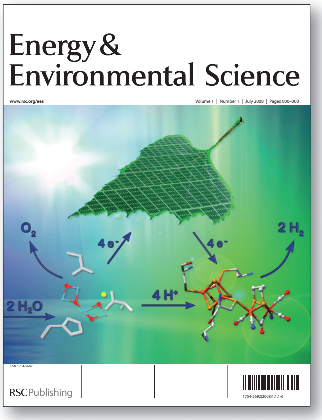
Call for Papers

'Energy is the most important scientific and technological challenge facing humanity in the twenty-first century. Energy security and environmental security have come to the forefront of both global and national priorities. This journal aims to bridge the various disciplines involved with energy and the environment, providing a forum for disclosing research results and discourse on this critical field.' Professor Nathan Lewis

Energy & Environmental Science publishes high quality research from aspects of the chemical sciences relating to energy conversion and storage, alternative fuel technologies and environmental science. It contains a full mix of primary articles, communications and reviews.

The current issue in 2008/9 will be free online. Free institutional online access to all 2008/9 content will be available following registration at **www.rsc.org/ees_registration**

Contact the Editor, Philip Earis, at **ees@rsc.org** or visit the website for more details.



International Editorial Board members include:

Professor Nathan Lewis, Caltech, USA *(Editorial Board Chair)*
Professor Vicki H Grassian, University of Iowa, USA
Professor Steven E Koonin, BP, London, UK
Professor Arthur Nozik, National Renewable Energy Laboratory, USA
Professor Robert Socolow, Princeton, USA
Professor Chris Somerville, UC Berkeley, USA
Professor Jefferson W Tester, MIT, MA, USA
Professor Michael R Wasielewski, Northwestern, IL, USA

Submit your work today!

RSC Publishing

www.rsc.org/ees

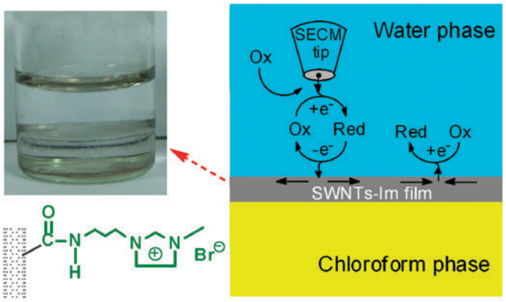
Registered Charity Number 207890

4273

Directing single-walled carbon nanotubes to self-assemble at water/oil interfaces and facilitate electron transfer

Yuanjian Zhang, Yanfei Shen, Daniel Kuehner, Shuixing Wu, Zhongmin Su, Shen Ye and Li Niu*

Flexible SWNT films with different thicknesses at water/oil interfaces were obtained by modifying SWNTs, and facilitated electron transfer at SWNT-sandwiched water/oil interfaces was observed using scanning electrochemical microscopy.

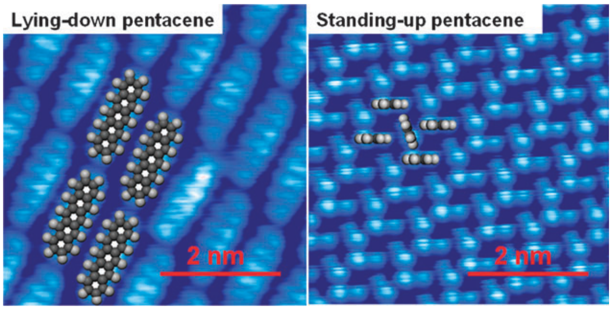


4276

Molecular orientation transition of organic thin films on graphite: the effect of intermolecular electrostatic and interfacial dispersion forces

Wei Chen,* Han Huang, Andrew Thye and Shen Wee*

In situ low-temperature scanning tunnelling microscopy investigation reveals a molecular orientation transition of pentacene and *p*-sexiphenyl films on graphite, arising from the coverage-dependent delicate balance between the intermolecular electrostatic and interfacial dispersion forces.

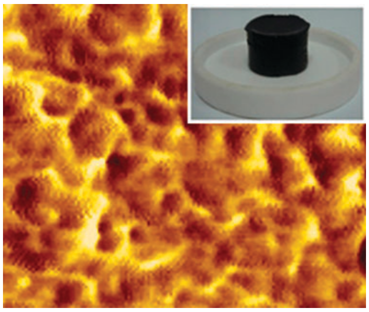


4279

Facile fabrication of conducting polymer hydrogels *via* supramolecular self-assembly

Tingyang Dai, Xiujuan Jiang, Shouhu Hua, Xiaoshu Wang and Yun Lu*

Conducting polymer hydrogels have been fabricated *via* supramolecular self-assembly. Multivalent cations act as both the oxidant and the ionic crosslinker. The gelation process takes place simultaneously with the polymerization process.

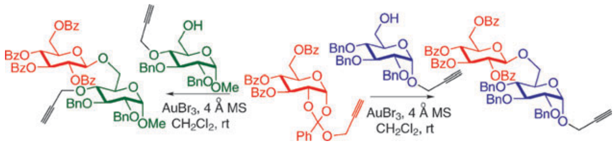


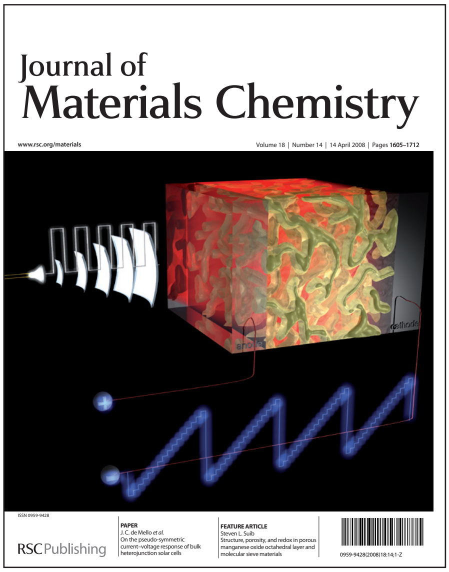
4282

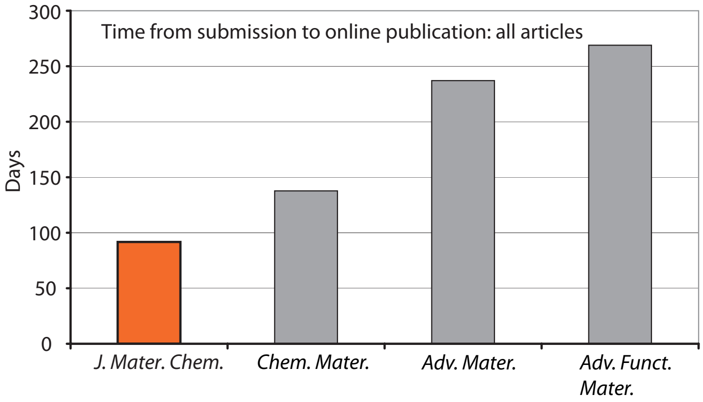
Gold mediated glycosylations: selective activation of propargyl 1,2-orthoesters in the presence of aglycones containing a propargyl moiety

Gopalsamy Sureshkumar and Srinivas Hotha*

Selective activation of propargyl 1,2-orthoesters in the presence of propargyl glycosides and propargyl ethers was studied. A catalytic amount of $AuBr_3$ activated the propargyloxy group of the 1,2-orthoester thereby giving access to disaccharides with the propargyl group at the reducing end.





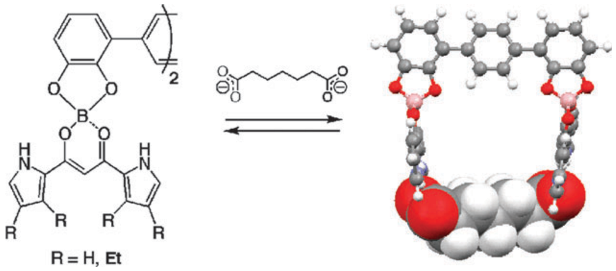

Time from submission to online publication: all articles
Days
300
250
200
150
100
50
0
J. Mater. Chem.
Chem. Mater.
Adv. Mater.
Adv. Funct. Mater.

4285

Diol-substituted boron complexes of dipyrrolyl diketones as anion receptors and covalently linked 'pivotal' dimers

Hiromitsu Maeda,* Yasunobu Fujii and Yuta Mihashi

Diol-substitution at a boron unit results in the formation of anion receptors consisting of dipyrrolyl diketones and covalently linked dimers, which exhibit selective binding for dianions with appropriate lengths.

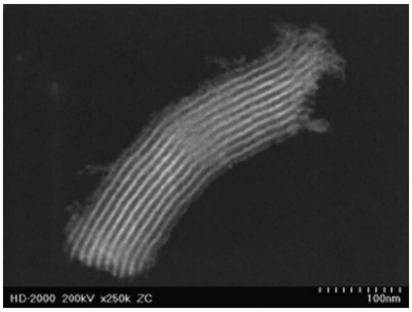


4288

Strategic synthesis of SBA-15 nanorods

Xiulei Ji, Kyu T. Lee, Muguette Monjauze and
Linda F. Nazar*

A simple synthesis of homogeneously sized, ordered mesoporous silica nanorods (SBA-15), spanning about 10 porous channels in width (<100 nm) and ranging from 400–600 nm in length is reported.

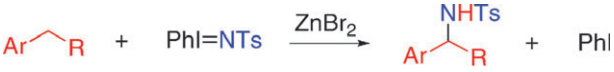


4291

Hydrous zinc halide-catalyzed aminosulfonation of hydrocarbons

Biswajit Kalita, Angus A. Lamar and
Kenneth M. Nicholas*

Benzylic and allylic hydrocarbons are selectively converted to the corresponding sulfonamides by a $ZnBr_2$–H_2O-catalyzed reaction with PhI=NTs. Saturated adamantane is aminosulfonated at the tertiary C–H bond.

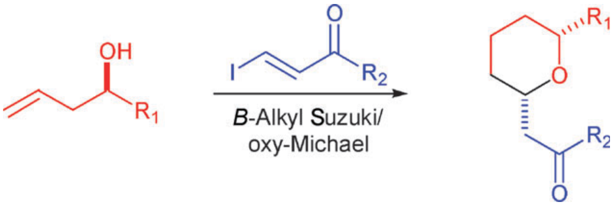


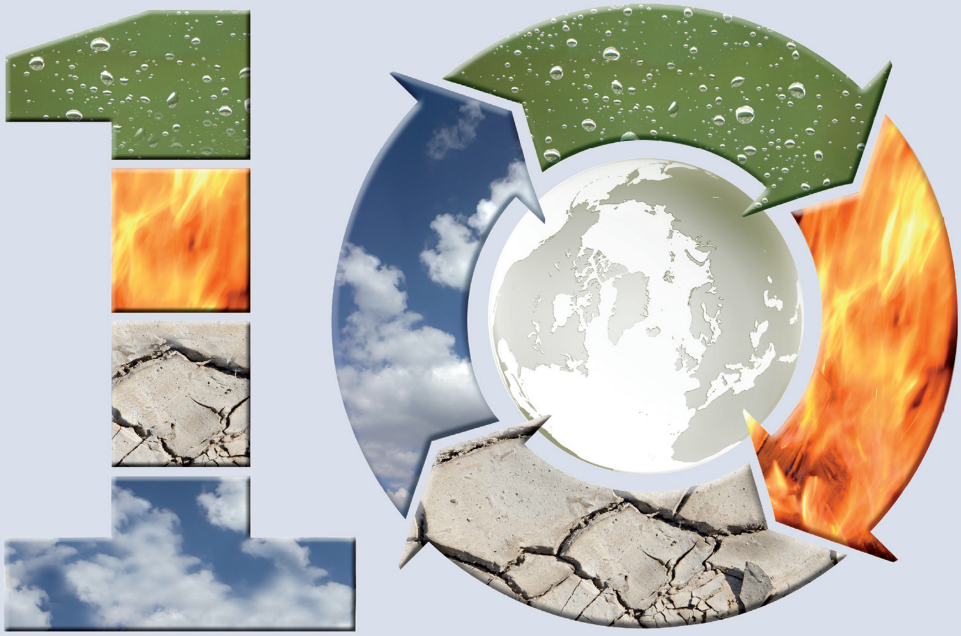
4294

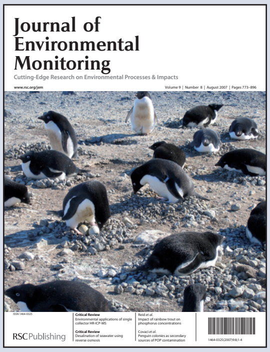
B-Alkyl Suzuki couplings for the stereoselective synthesis of substituted pyrans

Gregory W. O'Neil and Alois Fürstner*

A tandem *B*-alkyl Suzuki cross-coupling/oxy-Michael reaction sequence has been described for the stereoselective synthesis of substituted tetrahydropyrans including the olfactory natural product (+)-(*S*,*S*)-(*cis*-6-methyltetrahydropyran-2-yl)acetic acid.




10

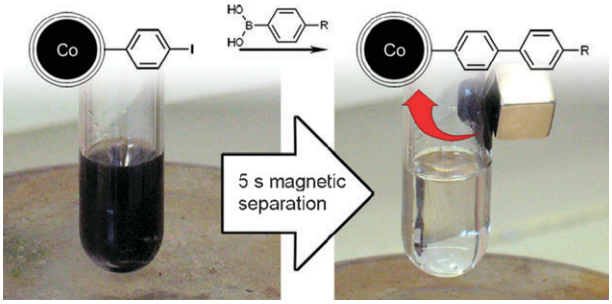

Journal of
Environmental
Monitoring
Cutting-Edge Research on Environmental Processes & Impacts
RSC Publishing

4297

Suzuki cross-coupling reactions on the surface of carbon-coated cobalt: expanding the applicability of core–shell nano-magnets

Chun Ghee Tan and Robert N. Grass*

To develop magnetic nanomaterials applicable to organic synthesis, the Suzuki cross-coupling method was adapted to attach a range of functional groups to carbon-coated core–shell materials *via* commercially-available substituted arylboronic acids.

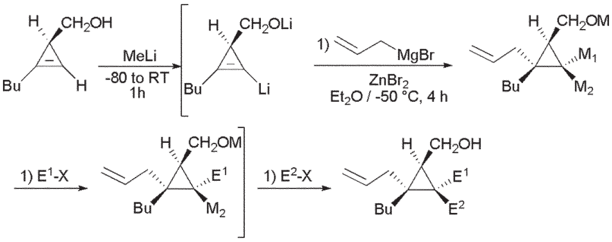


4300

Cyclopropenyllithiums as a new source of 1,1-bismetalated cyclopropyl derivatives

Anat Levin and Ilan Marek*

The allylmetalation of functionalised cyclopropenyllithium derivatives leads to the unique formation of 1,1-bismetalated cyclopropyl species that react selectively with different electrophiles.

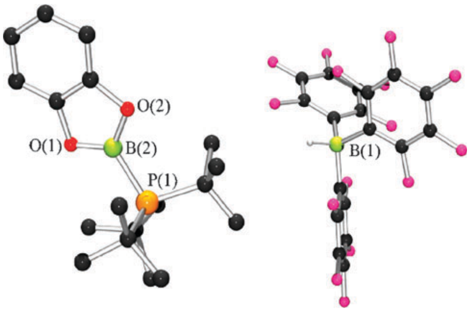


4303

B–H Activation by frustrated Lewis pairs: borenium or boryl phosphonium cation?

Meghan A. Dureen, A. Lough, Thomas M. Gilbert and Douglas W. Stephan*

Catechol borane reacts with the frustrated Lewis pairs tBu_2RP (R = tBu, 2-$C_6H_4(C_6H_5)$) and $B(C_6F_5)_3$ to give the species $[(C_6H_4O_2)BPtBu_2R][HB(C_6F_5)_3]$ that can formally be described as either borenium cation or boryl-phosphonium salts; the nature of these species was probed with DFT calculations.

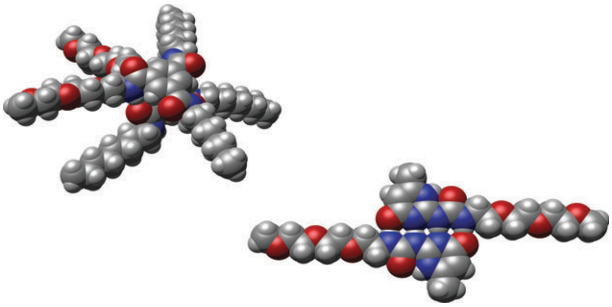


4306

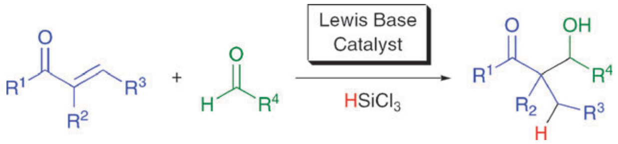
The influence of ethylene glycol chains on the thermodynamics of hydrogen-bonded supramolecular assemblies in apolar solvents

Tom F. A. de Greef, Marko M. L. Nieuwenhuizen, Patrick J. M. Stals, Carel F. C. Fitié, Anja R. A. Palmans, Rint P. Sijbesma and E. W. Meijer*

Substitution of H-bond directed supramolecular assemblies with ethylene glycol chains leads to a reduction in K_{ass} in apolar solvents, dependent on the length of the aliphatic spacer connecting the H-bonds and the ethylene glycol chain.



4309

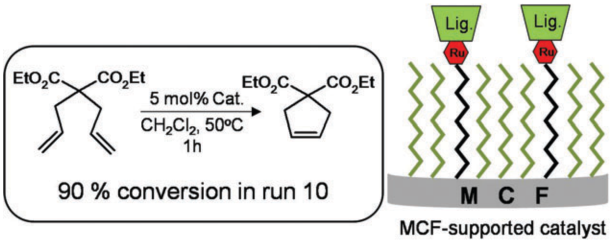


Lewis base-catalyzed conjugate reduction and reductive aldol reaction of α,β-unsaturated ketones using trichlorosilane

Masaharu Sugiura,* Norimasa Sato, Shunsuke Kotani and Makoto Nakajima*

Phosphorus oxide (P═O) Lewis bases catalyze the 1,4-reduction of α,β-unsaturated ketones with trichlorosilane and subsequent reactions with coexisting aldehydes (reductive aldol reactions).

4312

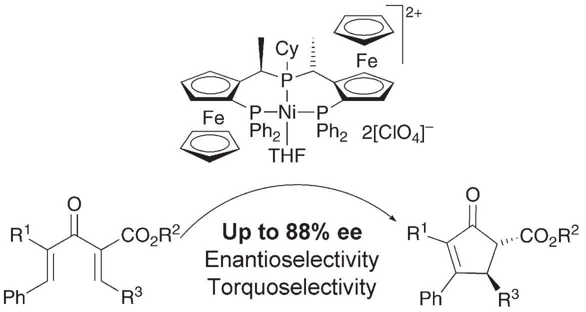


Silica-supported catalysts for ring-closing metathesis: effects of linker group and microenvironment on recyclability

Jaehong Lim, Su Seong Lee* and Jackie Y. Ying*

Recyclability was dramatically improved by modifying the linker and microenvironment of mesocellular foam-supported ruthenium catalysts for ring-closing metathesis (RCM).

4315

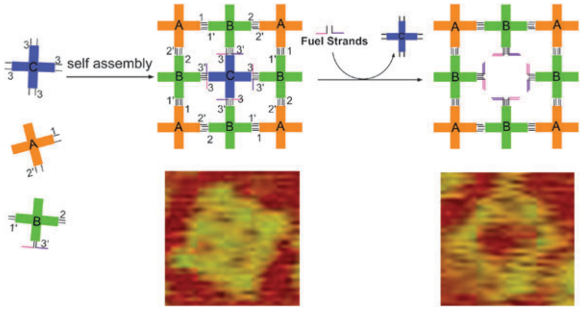


Ni(II)-catalyzed enantioselective Nazarov cyclizations

Irene Walz and Antonio Togni*

A dicationic Ni(II) complex containing the chiral ferrocenyl triphosphine Pigiphos catalyzes Nazarov cyclizations with a high degree of torquo- and enantioselectivity up to 88% ee.

4318



Subtractive assembly of DNA nanoarchitectures driven by fuel strand displacement

Zhe Li, Yonggang Ke, Chenxiang Lin, Hao Yan and Yan Liu*

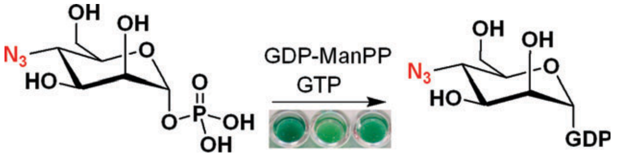
We report a new subtractive assembly strategy to generate DNA tile arrays with large central cavities, which are difficult to obtain using only additive assembly. AFM images clearly demonstrate the feasibility of this approach.

4321

Chemoenzymatic synthesis of GDP-azidodeoxymannoses: non-radioactive probes for mannosyltransferase activity

Silvia Marchesan and Derek Macmillan*

GDP-2-, 3-, 4- or 6-azidomannoses can be successfully prepared from the corresponding azidomannose-1-phosphates and GTP using the enzyme GDP-Mannosepyrophosphorylase (GDP-ManPP) from *Salmonella enterica* and may serve as useful probes for mannosyltransferase activity.

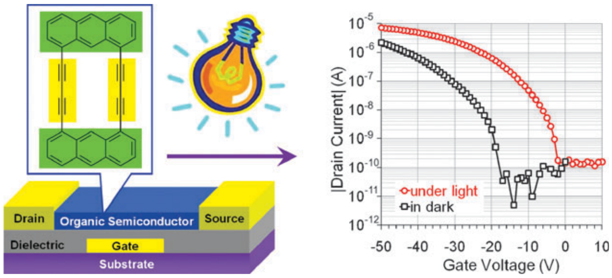


4324

Transistors from a conjugated macrocycle molecule: field and photo effects

Wei Zhao, Qin Tang, Hoi Shan Chan, Jianbin Xu, Ka Yuen Lo and Qian Miao*

This study explores a conjugated macrocycle molecule and details its synthesis, molecular structure, assemblies in the solid state and application in phototransistors.

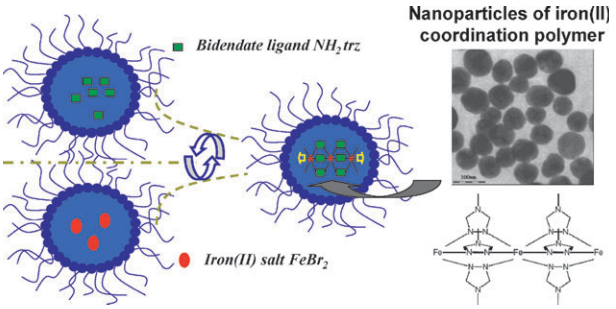


4327

Nanoparticles of iron(II) spin-crossover

Thibaut Forestier, Stéphane Mornet, Nathalie Daro, Taishi Nishihara, Shin-ichiro Mouri, Koichiro Tanaka, Olivier Fouché, Eric Freysz and Jean-François Létard*

We report the synthesis of spin crossover 69 nm spherical nanoparticles of $[Fe(NH_2\text{-trz})_3](Br)_2 \cdot 3H_2O \cdot 0.03(\text{surfactant})$ (NH_2trz = 4-amino-1,2,4-triazole, surfactant = Lauropal), prepared by the reverse micelle technique, which exhibit at room temperature a thermal hysteresis characterized by magnetic, diffuse reflectivity and Raman studies.

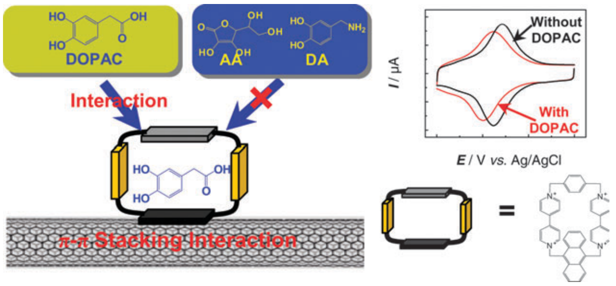


4330

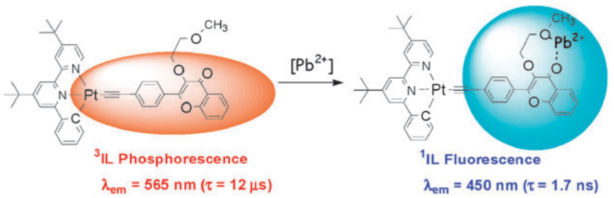
An electrochemical sensor for 3,4-dihydroxyphenylacetic acid with carbon nanotubes as electronic transducer and synthetic cyclophane as recognition element

Jie Yan, Yucheng Zhou, Ping Yu, Lei Su, Lanqun Mao,* Deqing Zhang* and Daoben Zhu

By taking advantage of the stronger binding affinity of the synthetic cyclophane towards 3,4-dihydroxyphenylacetic acid than ascorbic acid and dopamine, we have successfully developed a new electrochemical sensor with a promising application for the selective determination of DOPAC.



4333

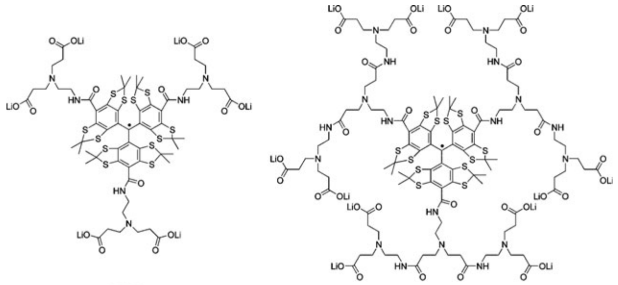


Cyclometallated platinum(II) complexes incorporating ethynyl–flavone ligands: switching between triplet and singlet emission induced by selective binding of Pb^{2+} ions

Pierre-Henri Lanoë, Jean-Luc Fillaut,* Loïc Toupet, J. A. Gareth Williams,* Hubert Le Bozec and Véronique Guerchais*

Platinum–ethynylflavone complexes display ^{3}IL phosphorescence associated with the appended flavone perturbed by the platinum centre, but switch dramatically to flavone-localised ^{1}IL fluorescence upon selective binding of Pb^{2+}.

4336



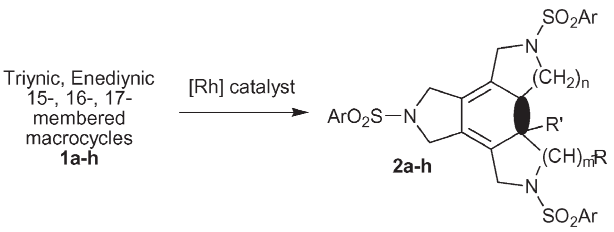
DTR1 **DTR2**

Highly stable dendritic trityl radicals as oxygen and pH probe

Yangping Liu, Frederick A. Villamena and Jay L. Zweier*

Novel dendritic trityl radicals (DTR1 and DTR2) with a TAM radical core, PAMAM branching and carboxylate exterior surface exhibit high stability towards oxidoreductants as evidenced by their electrochemical and EPR properties, offering potential application as dual oxygen and pH probe.

4339

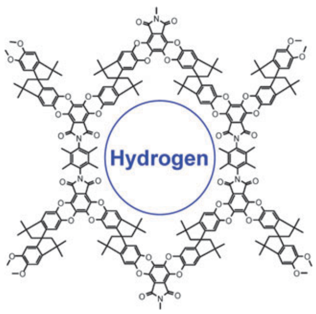


Fused tetracycles with a benzene or cyclohexadiene core: [2 + 2 + 2] cycloadditions on macrocyclic systems

Sandra Brun, Lídia Garcia, Iván González, Anna Torrent, Anna Dachs, Anna Pla-Quintana, Teodor Parella and Anna Roglans*

Rh(I)-catalyzed [2 + 2 + 2] cycloaddition reactions of macrocyclic systems afford high yields of fused tetracycles with benzene and cyclohexadiene cores.

4342



Hydrogen adsorption in microporous organic framework polymer

Saad Makhseed* and Jacob Samuel

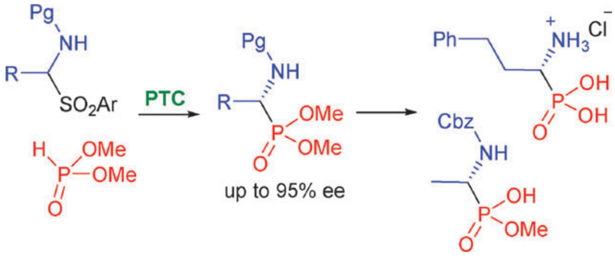
A microporous organic framework polymer (OFP) based on a polyimide framework exhibits a high surface area (1159 m^2 g^{-1}) and shows a reversible H_2 storage capacity of 3.94 wt% at 10 bar and 77 K, the highest yet reported for an organic polymer.

4345

An easy entry to optically active α-amino phosphonic acid derivatives using phase-transfer catalysis (PTC)

Francesco Fini, Gabriele Micheletti, Luca Bernardi,* Daniel Pettersen, Mariafrancesca Fochi and Alfredo Ricci*

The unprecedented use of phase-transfer catalysis (PTC) in an asymmetric hydrophosphonylation reaction allows the obtainment of a range of optically active α-amino phosphonic acid derivatives directly from α-amido sulfones.

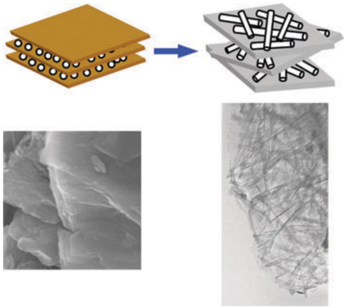


4348

Lamellar carbon nanosheets function as templates for two-dimensional deposition of tubular titanate

Wenqin Peng, Zhengming Wang,* Noriko Yoshizawa, Hiroaki Hatori and Takahiro Hirotsu

A novel composite composed of tubular titanate–two dimensionally deposited carbon nanosheets was prepared with carbon nanosheets as templates; this nanotube-based composite and its calcined products exhibit both excellent adsorptivity and high photocatalytic activity toward organic molecules.

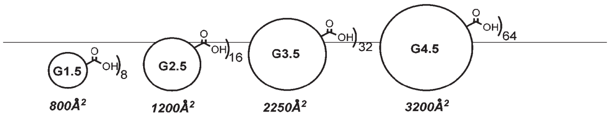


4351

Dendrimers as size selective inhibitors to protein–protein binding

Fumiko Chiba, Ting-Chou Hu, Lance J. Twyman* and Mark Wagstaff

The "quantized" size effect of dendrimers can be exploited towards a size selective binding mechanism for the inhibition of protein–protein binding.

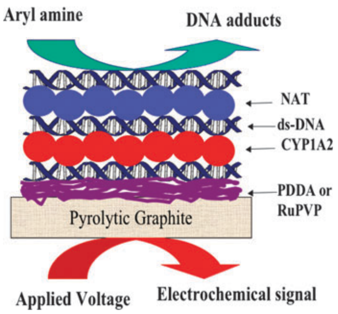


4354

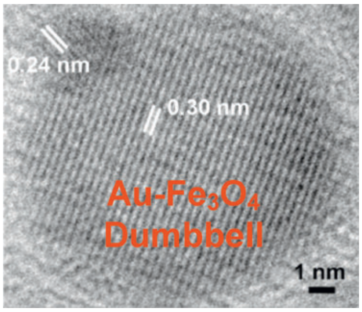
Electrochemical biosensor featuring a two-enzyme pathway and DNA for screening toxic reactive metabolites of arylamines

Minjeong So, John B. Schenkman and James F. Rusling*

The first biosensor featuring a sequential two-enzyme pathway and DNA to screen toxic reactive metabolites generated during metabolism of arylamines is reported.



4357

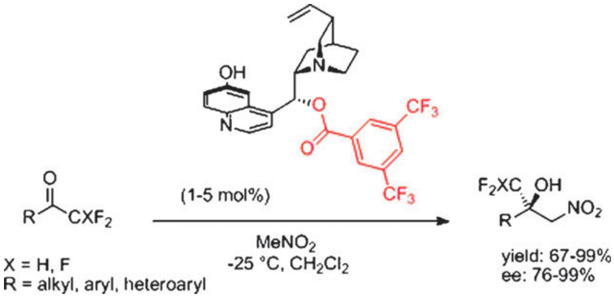


Colloidal deposition synthesis of supported gold nanocatalysts based on Au–Fe$_3$O$_4$ dumbbell nanoparticles

Hongfeng Yin, Chao Wang, Haoguo Zhu,
Steven H. Overbury, Shouheng Sun* and Sheng Dai*

A new colloidal deposition methodology is used to introduce Au catalysts on supports *via* dumbbell-structured Au–Fe$_3$O$_4$ nanoparticles. Highly active and stable Au catalysts are prepared using oxide and even carbon supports.

4360

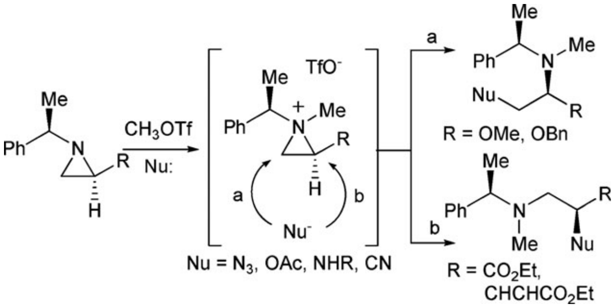


Enantioselective organocatalyzed Henry reaction with fluoromethyl ketones

Marco Bandini,* Riccardo Sinisi and
Achille Umani-Ronchi*

Fluoro calls for fluoro. An highly enantioselective organocatalyzed nitroaldol condensation of fluoro-substituted ketones is presented. The designed fluoro-containing cupreine **3g** allowed the synthesis of a range of β-nitroalcohols in high yields and excellent *ees* (up to 99%).

4363



The preparation of stable aziridinium ions and their ring-openings

Yongeun Kim, Hyun-Joon Ha,* Sae Young Yun and
Won Koo Lee*

The reaction of enantiomerically pure 2-substituted 1-phenylethyl-aziridine with methyl trifluoromethanesulfonate generated a stable methylaziridinium ion, which was reacted with various nucleophiles to yield acyclic amine derivatives in a completely regio- and stereoselective manner.

AUTHOR INDEX

FREE E-MAIL ALERTS AND RSS FEEDS

Contents lists in advance of publication are available on the web via www.rsc.org/chemcomm – or take advantage of our free e-mail alerting service (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 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 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).