ChemComm

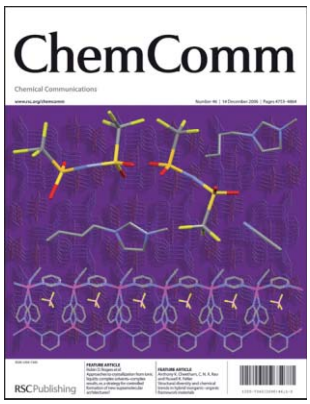
Chemical Communications

www.rsc.org/chemcomm

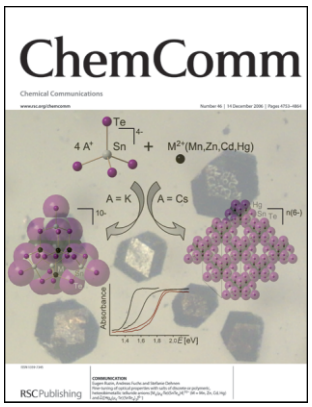
RSC Publishing is a not-for-profit publisher and a division of the Royal Society of Chemistry. Any surplus made is used to support charitable activities aimed at advancing the chemical sciences. Full details are available from www.rsc.org

IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS (46) 4753–4864 (2006)



Cover
See Robin D. Rogers *et al.*, page 4767. Silver nanotubes, $[Ag(pyrimidine)_2]_3[BF_4][NTf_2]_2$, were isolated from a complex mixture of ionic liquid, metal salt, and co-solvent, where the co-solvent provided metal ion solubility, the $[BF_4]^-$ anions templated the coordination polymer, and the $[NTf_2]^-$ anions insulated the nanotubes, decreasing electrostatic repulsions, and leaving very little void space in the structure. Image reproduced by permission of W. Matthew Reichert, John D. Holbrey, Kate B. Vigour, Tonya D. Morgan, Grant A. Broker and Robin D. Rogers from *Chem. Commun.*, 2006, 4767.



Inside cover
See Stefanie Dehnen *et al.*, page 4796. In search of water-soluble chalcogenometallate semiconductor compounds, a series of compounds with first discrete M/Sn/Te anions $[M_4Sn_4Te_{17}]^{10-}$ or a polymeric derivative $\{[Hg_4Sn_3Te_{13}]^{6-}\}_n$ of the ternary anionic structure—all featuring optical absorption energies in the semiconductor range—have been synthesized by reacting K^+ (or Rb^+) or Cs^+ salts of $[SnTe_4]^{4-}$ with MCl_2 (M = Mn, Zn, Cd, Hg) in H_2O. Image reproduced by permission of Eugen Ruzin, Andreas Fuchs and Stefanie Dehnen from *Chem. Commun.*, 2006, 4796.

CHEMICAL TECHNOLOGY

T45

Chemical Technology highlights the latest applications and technological aspects of research across the chemical sciences.

Chemical Technology

December 2006/Volume 3/Issue 12

www.rsc.org/chemicaltechnology

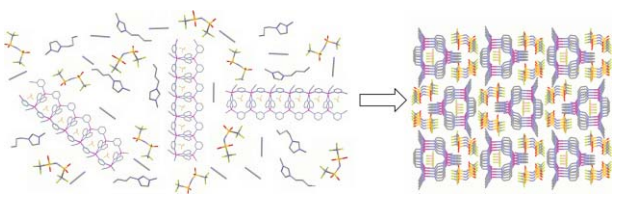
FEATURE ARTICLES

4767

Approaches to crystallization from ionic liquids: complex solvents–complex results, or, a strategy for controlled formation of new supramolecular architectures?

W. Matthew Reichert, John D. Holbrey, Kate B. Vigour, Tonya D. Morgan, Grant A. Broker and Robin D. Rogers*

There are now more than 1200 papers a year describing research using ionic liquids as solvents, but comparatively little on their use in crystallization; we explore here why this is so and strategies for utilization of ionic liquids for crystallization and crystal engineering.



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

2006 Annual (print + electronic) subscription price: £1745; US$3193. 2006 Annual (electronic) subscription price: £1570; US$2874. 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

ChemComm

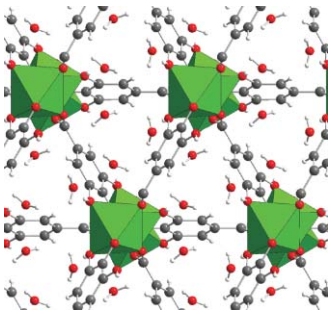
Chemical Communications

www.rsc.org/chemcomm

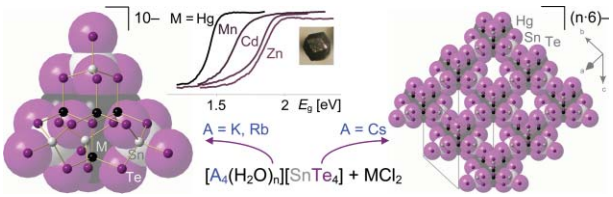
♾ The paper used in this publication meets the requirements of ANSI/NISO Z39.48–1992 (Permanence of Paper).

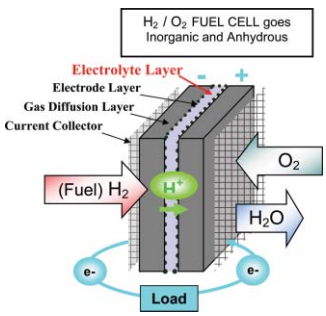
Royal Society of Chemistry: Registered Charity No. 207890.

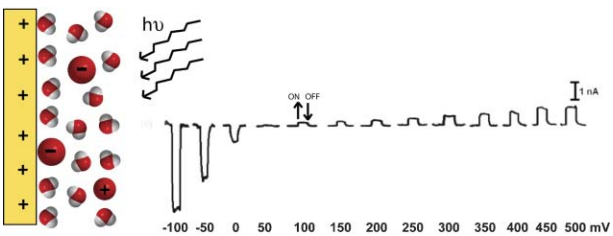
FEATURE ARTICLES

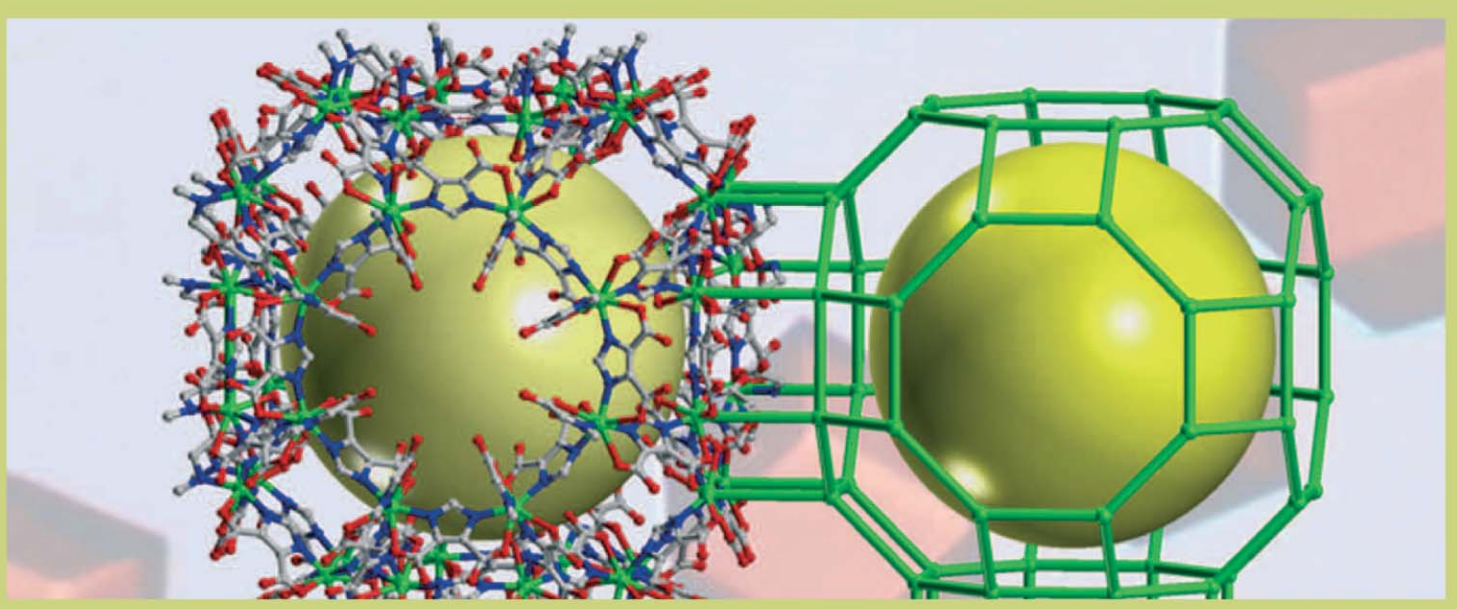


COMMUNICATIONS









Registered Charity Number 207890

ChemComm

… a leading international journal for the publication of communications on important new developments in the chemical sciences. It provides preliminary accounts of original and significant research that will appeal to a wide general readership or be of exceptional interest to the specialist.

- high impact – Impact Factor 4.426
- rapid publication – typically 60 days from receipt to publication
- 3 page communications, providing authors with the flexibility to develop their results and discussion
- high visibility – indexed in MEDLINE and other major databases
- high exposure – top papers are highlighted as "Hot Papers" to the wider scientific press
- free colour where scientifically necessary and no page charges

Submit your paper today at **www.rsc.org/resource**

Professor T. Don Tilley

US Associate Editor for inorganic, organometallic and materials chemistry

Don Tilley is Professor of Chemistry at the University of California, Berkeley. His research involves synthetic, structural and reactivity studies in organometallic systems. Metal-mediated routes to new polymers, and molecular approaches to the designed construction of advanced solid state materials and heterogeneous catalysts are also being developed.

Happy to receive papers on important developments in inorganic, organometallic and materials chemistry, Professor Tilley can be contacted via **chemcomm@berkeley.edu**

25080690-a

RSC Publishing

www.rsc.org/chemcomm

4805

A highly water-soluble C_{60}–NVP copolymer: a potential material for photodynamic therapy

Yuko Iwamoto and Yoko Yamakoshi*

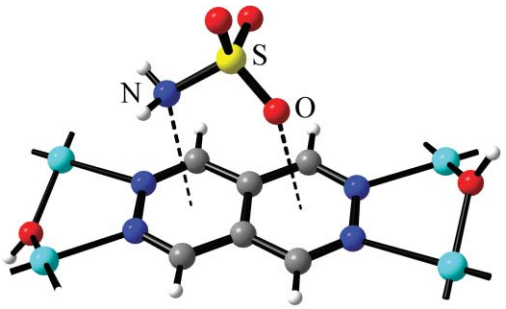
A water-soluble C_{60} polymer with the highest solubility (7.8 mM estimated as C_{60} monomer) was prepared by a copolymerization with *N*-vinylpyrrolidone giving 30–50 kDa polymers with possible applications in photodynamic therapy.

4808

Metal–organic frameworks exhibiting strong anion–π interactions

Il'ya A. Gural'skiy, Pavlo V. Solntsev, Harald Krautscheid and Konstantin V. Domasevitch*

Pyridazino[4,5-*d*]pyridazine is a unique bicyclic π,π-acidic system that retains efficient N-donor properties towards transition metal ions. Coordination polymers typically support strong anion–π interactions and reveal an unprecedented double anion–π,π binding.

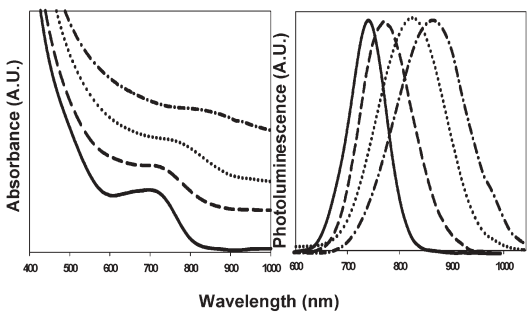


4811

$InAs_xSb_{1-x}$ alloy nanocrystals for use in the near infrared

Sang-Wook Kim,* Sujith S. and Bun Yeoul Lee

$InAs_xSb_{1-x}$ alloy nanocrystals for the near-infrared, which have quite a monodisperse crystalline structure of 2.5–3.0 nm and are of a zinc blend structure, are developed.

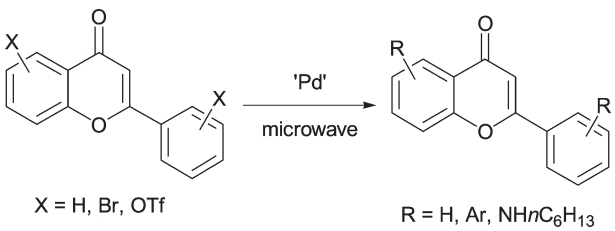


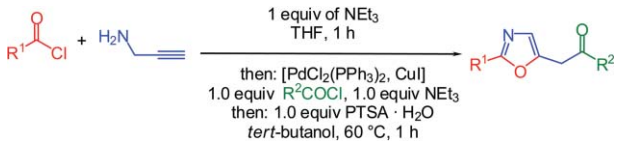
4814

Microwave enhanced palladium catalysed coupling reactions: A diversity-oriented synthesis approach to functionalised flavones

Richard J. Fitzmaurice, Zac C. Etheridge, Emelie Jumel, Derek N. Woolfson and Stephen Caddick*

The utility of diversity-oriented synthesis using palladium catalysed protocols with microwave heating is highlighted by application to functionalised flavones.

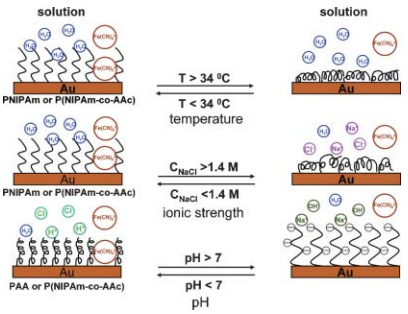




A new consecutive three-component oxazole synthesis by an amidation–coupling–cycloisomerization (ACCI) sequence

Eugen Merkul and Thomas J. J. Müller*

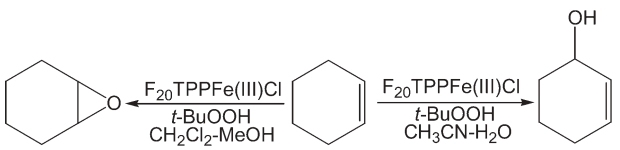
Amidation, alkynylation and cycloisomerization in a one-pot sequence: A novel consecutive three-component synthesis of 1-(hetero)aryl-2-(2-(hetero)aryl-oxazol-5-yl) ethanones starting from propargyl amine and acid chlorides, both for amidation and cross-coupling, is based upon an amidation–coupling–cycloisomerization (ACCI) sequence.



Temperature, ionic strength and pH induced electrochemical switching of smart polymer interfaces

Jianhua Zhou, Geng Wang, Jianqiang Hu, Xianbo Lu and Jinghong Li*

A reversible electrochemical switching has been displayed at smart polymer brush interfaces, which was responsive to temperature, ionic strength and pH stimuli, independently or simultaneously.



Cytochrome P-450 model compound catalyzed selective hydroxylation of C–H bonds: Dramatic solvent effect

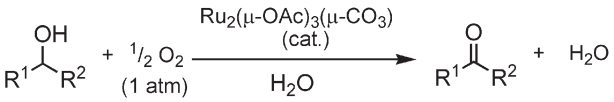
Arunava Agarwala and Debkumar Bandyopadhyay*

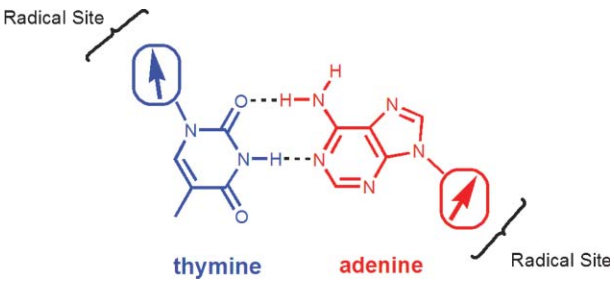
Selective hydroxylation of cyclohexane and cyclohexene by *t*-BuOOH in presence of F_{20}TPPFe(III)Cl as the catalyst has been achieved at room temperature in high yields.

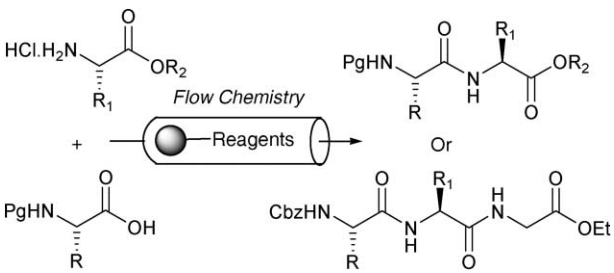
The use of calcium carbide in one-pot synthesis of symmetric diaryl ethynes

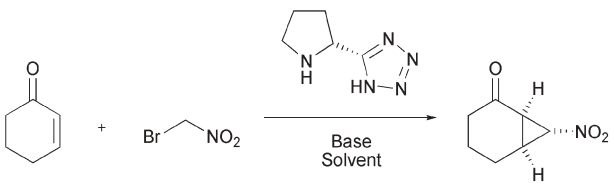
Weiwei Zhang, Huayue Wu, Zhiqing Liu, Ping Zhong, Lin Zhang, Xiaobo Huang and Jiang Cheng*

Symmetric diaryl ethynes could be prepared by the combination of aryl bromides, CaC_2, $Pd(OAc)_2$, **L1** and K_2CO_3 in undried THF in one-pot.









Bring science to life …

With a successful first year of publishing at the interface between chemistry, the –omic sciences and systems biology now complete, Molecular BioSystems provides great science, top authors and rapid publication and is now in MEDLINE. The online journal also has a number of additional features providing an enhanced service for both authors and readers – so follow the Molecular BioSystems pathway for the complete online service.

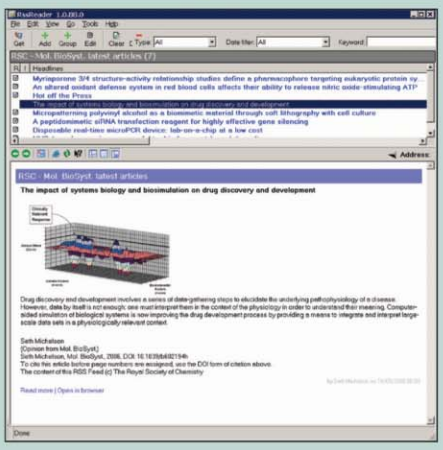
view Advance Articles and Table of Contents, both complete with graphical abstracts

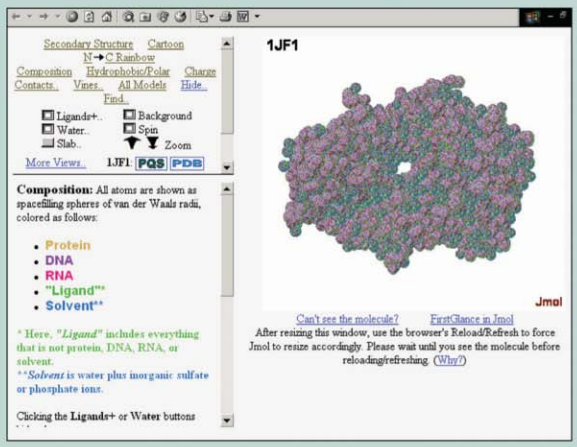
see **3D visualisations** of molecules with options for customising the view and zooming in to specific areas

sign up for **RSS feeds** (including graphical abstracts) or Table of Content ealerts, to get the latest news about the research in your area

access **links to data** in PubChem, wwwPDB, Swissprot and GenBank

obtain **free downloads** of ChemDraw files of any significant structures





Go to Molecular BioSystems online today!

RSC Publishing

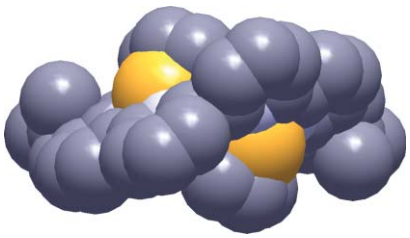
www.molecularbiosystems.org

4841

Stereoselective formation of a single-stranded helicate: Structure of a bis(palladium-allyl)quaterpyridine complex and its use in catalytic enantioselective allylic substitution

Hoi-Lun Kwong,* Ho-Lun Yeung, Wing-Sze Lee and Wing-Tak Wong

Chiral C_2-symmetric quaterpyridine reacts with $[Pd(\eta_3\text{-}C_3H_5)Cl]_2$ stereoselectivity to form a single-stranded helical binuclear palladium complex which catalyze asymmetric allylic substitution.

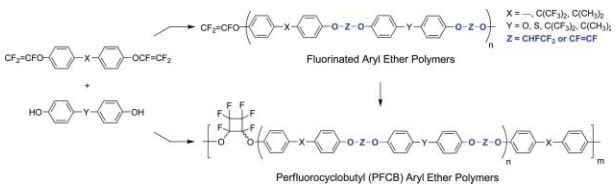


4844

Facile preparation of fluorovinylene aryl ether telechelic polymers with dual functionality for thermal chain extension and tandem crosslinking

Scott T. Iacono, Stephen M. Budy, Dirk Ewald and Dennis W. Smith, Jr.*

The facile preparation of new fluorovinylene aromatic ether polymers *via* step-growth addition polymerization of commercial bis(trifluorovinyl) aromatic ethers and bisphenols is described. The resulting polymers possess dual fluoroolefin functionality, allowing tandem thermally-initiated chain extension and crosslinking.

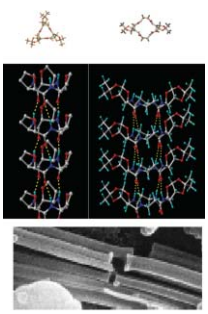


4847

Self-assembly of cyclic homo- and hetero-β-peptides with *cis*- furanoid sugar amino acid and β-hGly as building blocks

Bulusu Jagannadh,* Marepally Srinivasa Reddy, Chennamaneni Lohitha Rao, Anabathula Prabhakar, Bharatam Jagadeesh* and Srivari Chandrasekhar*

A new class of peptide nanotubes, self-assembled from cyclic homo- and hetero-β-peptides based on *cis*-furanoid sugar amino acid and β-hGly residues are described and represent the expansion of the conformational pool of *cis* β-sugar amino acids in the design of peptide nanotubes.

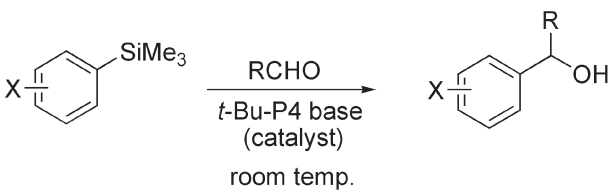


4850

Phosphazene base-promoted functionalization of aryltrimethylsilanes

Koichi Suzawa, Masahiro Ueno, Andrew E. H. Wheatley and Yoshinori Kondo*

Selective functionalizations of arylsilanes were accomplished using *t*-Bu-P4 base catalyst.



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.

RSS 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 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).