# NJC

# New Journal of Chemistry. An international journal for the chemical sciences www.rsc.org/njc

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 1144-0546 CODEN NJCHES 34(10) 2061-2336 (2010)



#### Cover

See Andreas Schnepf, pp. 2079–2092. Metalloid cluster compounds of germanium – metastable intermediates on the way to elemental germanium give a first insight onto the borderland between molecules and the solid state. Dr Christian Schenk is thanked for supporting the construction of the cover image. Image reproduced by permission of Andreas Schnepf from New J. Chem., 2010, **34**, 2079.



#### Inside cover

See Letizia Sambri et al., pp. 2093–2096. Under ultrasound irradiation, terpyridine derivatives "dance" in solution with water, acids and metal cations. When the "music" stops, molecules self-assemble and stable hydrogels are formed. Image reproduced by permission of Letizia Sambri from New J. Chem., 2010, 34, 2093.

#### **EDITORIAL**

2077

#### NJC...a journal for new directions in chemistry

In this Editorial, we wish to inform our authors, reviewers and readers of our new requirements for the content and significance of submitted manuscripts.



#### **PERSPECTIVE**

2079

# Metalloid cluster compounds of germanium: novel structural motives on the way to elemental germanium!

#### Andreas Schnepf\*

Metalloid cluster compounds of germanium may be seen as intermediates on the way to elemental germanium, a borderland that is of particular interest, as drastic changes of physical properties take place during reduction from salt like oxidized species to the bulk elemental phase. In this review an account is given of the first steps in this novel field of group 14 chemistry, where special attention is focused on structural features and bonding properties.



#### **EDITORIAL STAFF**

Editor (RSC)

Sarah Ruthven

Deputy editor (RSC)

Kathleen Too

Editor (CNRS)

Denise Parent

Assistant editor (CNRS)

Marie Cote

Senior publishing editor

Flinor Richards

**Publishing editors** 

Mary Badcock, David Barden, Emma Eley, David Parker, Charles Quigg, Michael Townsend

Publishing assistants

Anna Anderson, Jackie Cockrill

**Publisher** 

Emma Wilson

Founding editor

Lionel Salem

For queries about submitted articles please contact Elinor Richards, Senior publishing editor, in the first instance. E-mail njc@rsc.org

For pre-submission queries please contact Sarah Ruthven (RSC), Editor. E-mail njc-rsc@rsc.org

New Journal of Chemistry (Print: ISSN 1144-0546; electronic: ISSN 1369-9261) is published 12 times a year by the Centre National de la Recherche Scientifique (CNRS), 3 rue Michel-Ange, 75794 Paris cedex 16, France, and the Royal Society of Chemistry (RSC), 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

2010 Annual (print + electronic) subscription price: £894; US\$1668. 2010 Annual (electronic) subscription price: £804; US\$1501 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 New Journal of Chemistry, c/o Mercury Airfreight International Ltd., 365 Blair Road, Avenel, NJ 07001. All despatches outside the UK by Consolidated Airfreight.

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

For marketing opportunities relating to this journal, contact marketing@rsc.org

# NIC

# New Journal of Chemistry An international journal for the chemical sciences

#### www.rsc.org/njc

The New Journal of Chemistry is a broad-based primary journal encompassing all branches of the chemical sciences. Published monthly, it contains full research articles, letters, opinions and perspectives.

#### **EDITORIAL BOARD**

Co-editor-in-chief

Jerry Atwood, Columbia, MO, USA

Co-editor-in-chief

Mir Wais Hosseini, Strasbourg, France

Consulting editor

Odile Eisenstein, Montpellier, France

Board members

Kumar Biradha, Khargapur, India Fabrizia Grepioni, Bologna, Italy Helen Hailes, London, UK Peter Junk, Monash, Australia Barbara Nawrot, Lodz, Poland Alan Rowan, Nijmegen, The Netherlands Michael Scott, Gainesville, FL, USA

Associate editors

Manuscripts should be directed to one of the Editors detailed below.

Professor Peter Junk School of Chemistry, Monash University, Box 23, Victoria 3800, Australia Fax (+61) 3 9905 4597 Tel (+61) 3 9905 4570 E-mail njc@sci.monash.edu.au Professor Michael J. Scott Department of Chemistry, University of Florida, PO Box 117200, Gainesville, FL 32611, USA Fax (+1) 352 392 3255 Tel (+1) 352 846 1165 E-mail njc@chem.ufl.edu Dr Denise Parent New Journal of Chemistry, Université Montpellier II, Place Eugène Bataillon C.C. 014, 34095 Montpellier cedex 5, France Fax (+33) (0) 4 67 14 48 79 Tel (+33) (0) 4 67 14 48 78 E-mail njc@univ-montp2.fr

David Reinhoudt, Enschede,

Kari Rissanen, Jyväskylä, Finland

Clément Sanchez, Paris, France

Jeremy K. M. Sanders, Cambridge, UK

The Netherlands

#### **ADVISORY BOARD**

Markus Antonietti, MPI, Potsdam, Germany

Yasuhiro Aoyama, Kyoto, Japan Matthias Bremer, Darmstadt, Germany Robert Crabtree, New Haven, CT LI

Robert Crabtree, New Haven, CT, USA François Fajula, Montpellier, France John A. Gladysz, College Station, TX, USA George Gokel, St Louis, MO, USA Andrew B. Holmes, Melbourne, Australia Miguel Julve, Valencia, Spain Henryk Koslowski, Wroclaw, Poland Jean-Pierre Majoral, Toulouse, France Luca Prodi, Bologna, Italy

Jean-Pierre Majoral, Toulouse, France
Luca Prodi, Bologna, Italy
Jan Reedijk, Leiden, The Netherlands
Jonathan W. Steed, Durham, UK
Vivian Yam, Hong Kong, PR China

#### **INFORMATION FOR AUTHORS**

Full details on how to submit material for publication in New Journal of Chemistry are given in the Instructions for Authors (available from http://www.rsc.org/authors). Submissions should be made *via* the journal's homepage: http://www.rsc.org/njc.

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

©The Royal Society of Chemistry and the Centre National de la Recherche Scientifique 2010. 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 Regulation 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 Publishers 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.

 ⊕ 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.

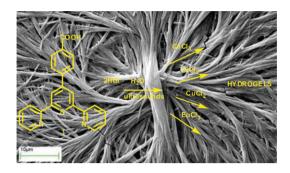
#### **LETTERS**

#### 2093

#### Ultrasound-promoted hydrogelation of terpyridine derivatives

Letizia Sambri,\* Fabio Cucinotta, Gabriele De Paoli, Stefano Stagni and Luisa De Cola

Terpyridine derivatives gel water and capture some metal cations giving stable gels with different emissive properties.



#### 2097

#### Single-color pseudorotaxane-based temperature sensing

Isurika R. Fernando, Semere G. Bairu, Guda Ramakrishna\* and Gellert Mezei\*

The continuous and reversible change in optical absorption of charge-transfer based colored pseudorotaxane solutions over large temperature windows suggests that these systems could be exploited in novel temperature sensors.

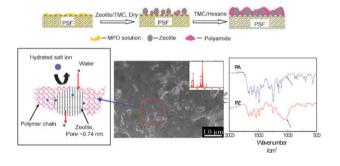


#### 2101

"Pre-seeding"-assisted synthesis of a high performance polyamide-zeolite nanocomposite membrane for water purification

Chunlong Kong, Takuji Shintani and Toshinori Tsuru\*

A new type of polyamide-zeolite nanocomposite membrane has been fabricated for use in water purification by a "pre-seeding" method. The incorporated zeolite provides a preferential flow path for water permeability.

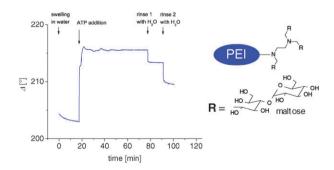


#### 2105

#### pH-stable hyperbranched poly(ethyleneimine)-maltose films for the interaction with phosphate containing drugs

Anne Richter, Andreas Janke, Stefan Zschoche, Ralf Zimmermann, Frank Simon, Klaus-Jochen Eichhorn, Brigitte Voit and Dietmar Appelhans\*

The uptake and release of ATP by hyperbranched poly(ethyleneimine)-maltose (PEI-Mal) hydrogel films is observable by in-situ ellipsometric measurements which can be intrigued with other potential bio-applications for establishing multifunctional thin PEI-Mal hydrogel films.



# **Prizes and Awards**

**Rewarding Excellence and Dedication** 

# We know how passionate you are about your work

Our Prizes and Awards recognise achievements by individuals, teams and organisations in advancing the chemical sciences.

There are over 60 Prizes and Awards available covering all areas of the chemical sciences so whether you work in business, industry, research or education recognition is open to everyone.

# Reward achievement

2011 nominations open on 1 September 2010

To view our full list of Prizes and Awards visit our website.

Closing date for nominations is 31 January 2011

RSC | Advancing the Chemical Sciences



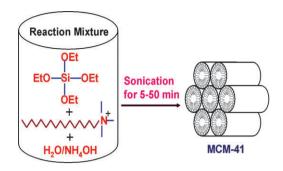
#### **LETTERS**

#### 2109

### The ultrafast sonochemical synthesis of mesoporous silica MCM-41

Shanmugam Vetrivel, Ching-Ting Chen and Hsien-Ming Kao\*

Well-ordered mesoporous silica MCM-41 has been synthesized using cetyltrimethylammonium bromide (CTMABr) as a template under basic media with the aid of ultrasonic irradiation in a very short time period of 5–50 min.

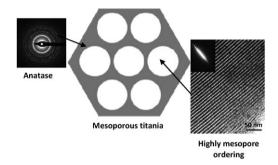


#### 2113

# Highly ordered mesoporous titania with semi crystalline framework templated by large or small nonionic surfactants

Kevin Zimny, Jaafar Ghanbaja, Cédric Carteret, Marie-José Stébé and Jean-Luc Blin\*

Highly ordered mesoporous titania.

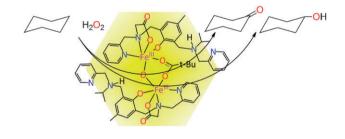


#### 2118

# A monocarboxylate-bridged diiron(III) μ-oxido complex that catalyzes alkane oxidation by hydrogen peroxide

Martin Jarenmark, Elena A. Turitsyna, Matti Haukka, Albert A. Shteinman and Ebbe Nordlander\*

A new pivalate-bridged  $\mu$ -oxido diiron complex catalyzes the oxidation of cyclohexane or 1,2-cis-dimethylcyclohexane by hydrogen peroxide, forming the corresponding ketones and alcohols.

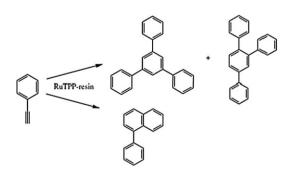


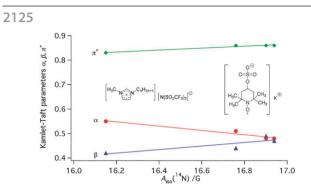
#### 2122

#### Ruthenium porphyrin bound to a Merrifield resin as heterogeneous catalyst for the cyclooligomerization of arylethynes

Alina Ciammaichella, Alessandro Leoni and Pietro Tagliatesta\*

Ruthenium *meso*-tetraphenylporphyrin bound to the Merrifield resin has been used in the cyclooligomerization of arylethynes, giving heterobiaryl and triphenylbenzenes as final products with a complete recycling of the catalyst.

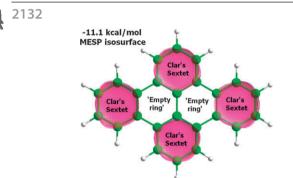




#### Relationship between hyperfine coupling constants of spin probes and empirical polarity parameters of some ionic liquids

Veronika Strehmel,\* Ralf Lungwitz, Hans Rexhausen and Stefan Spange

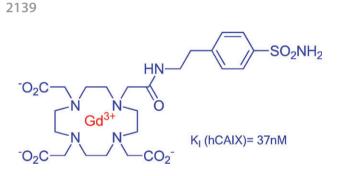
Polarity of ionic liquids: study with solvatochromic and spin probes.



#### Pictorial representation and validation of Clar's aromatic sextet theory using molecular electrostatic potentials

Kunduchi Periya Vijayalakshmi and Cherumuttathu H. Suresh\*

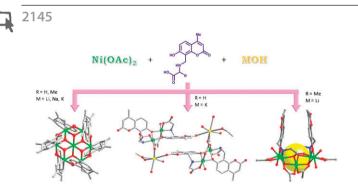
An intimate relationship between molecular electrostatic potential (MESP) and Clar's aromatic sextet theory is reported.



#### Carbonic anhydrase inhibitors: Gd(III) complexes of DOTA- and TETA-sulfonamide conjugates targeting the tumor associated carbonic anhydrase isozymes IX and XII

Marouan Rami, Jean-Louis Montero, Ludwig Dubois, Philippe Lambin, Andrea Scozzafava, Jean-Yves Winum\* and Claudiu T. Supuran\*

Gd3+ ion-containing sulfonamide complexes have excellent CA IX inhibitory activity and potential for application in both the imaging and treatment of hypoxic tumors.



#### Alkali metal ion directed self-assembled Ni(II) molecular clusters

Wei Lee Leong and Jagadese J. Vittal\*

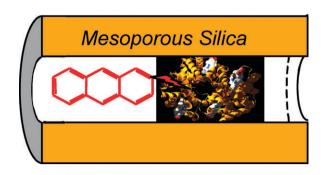
Self-assembly of Ni<sup>2+</sup> with coumarin-derived amino acids directed by alkali metal ions furnished interesting oligonuclear structures including heptanickel metallocrowns with highly symmetrical hexagonal shapes, a heterobimetallic molecular cage and a pentanickel cluster with a nanobasket shape.

#### 2153

Hemoglobin immobilized on mesoporous silica as effective material for the removal of polycyclic aromatic hydrocarbons pollutants from water

Paco Laveille, Aude Falcimaigne, Françoise Chamouleau, Gilbert Renard, Jullien Drone, Francois Fajula, Sylviane Pulvin, Daniel Thomas, Carole Bailly and Anne Galarneau\*

Adsorption of hemoglobin into mesoporous silica leads to a highly efficient biocatalyst able to remove more than 82% of PAH at pH 7 from water using H<sub>2</sub>O<sub>2</sub> as oxidant.

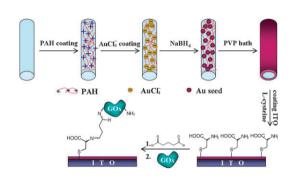


#### 2166

Gold/mesoporous silica-fiber core-shell hybrid nanostructure: a potential electron transfer mediator in a bio-electrochemical system

Haigang Kang, Yihua Zhu,\* Xiaoling Yang, Jianhua Shen, Cheng Chen and Chunzhong Li

Mesostructured silica fibers synthesized by electrospinning silica sol were used as templates for the assembly of gold nanoparticles and the formation of continuous gold shells along the fiber axis. The  $SiO_2@Au$  fiber hybrid nanostructures are further used as substrates for fabrication of a glucose biosensor, which exhibited excellent bio-electrochemical activity.

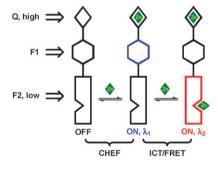


#### 2176

Metal-coordination-mediated sequential chelation-enhanced fluorescence (CHEF) and fluorescence resonance energy transfer (FRET) in a heteroditopic ligand system

Robert J. Wandell, Ali H. Younes and Lei Zhu\*

A two-fluorophore heteroditopic ligand system is established for achieving two sequential fluorescence events over a  ${\rm Zn}^{2+}$  gradient.

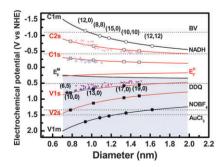


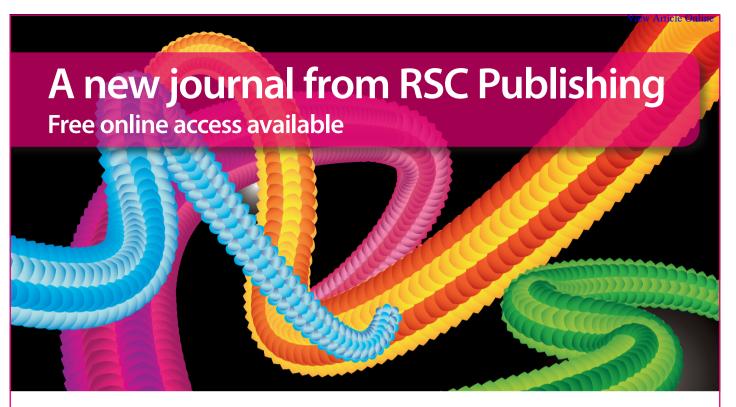
#### 2183

#### Doping strategy of carbon nanotubes with redox chemistry

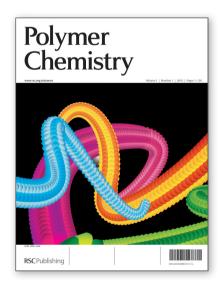
Ki Kang Kim, Seon-Mi Yoon, Hyeon Ki Park, Hyeon-Jin Shin, Soo Min Kim, Jung Jun Bae, Yan Cui, Jong Min Kim, Jae-Young Choi\* and Young Hee Lee\*

The reduction potential of SWCNT as a function of chirality and diameter is obtained based on theoretical calculations. The degree of doping can be controlled by the relative reduction potential between dopant and nanotube. Those phenomena were observed by absorption and Raman spectroscopy.





# **Polymer Chemistry**



A new peer-reviewed journal publishing advances in polymer chemistry encompassing all aspects of synthetic and biological macromolecules, and related emerging areas.

Polymer Chemistry provides a showcase for the ongoing efforts driving polymer chemistry, highlighting the creativity of the field and previously inaccessible applications. Monthly issues contain a full mix of research articles, including Communications, Reviews and Full Papers.

**Professor David Haddleton,** University of Warwick, is **Editor-in-Chief** of *Polymer Chemistry*.

The current issue of *Polymer Chemistry* is **freely accessible** on the website until the end of 2011. Free online institutional access to previous issue content during 2010 and 2011 is available following a simple registration process at www.rsc.org/free\_access\_registration

Visit the website to find out more

6860

#### 2189

Splitting a C–O bond in dialkylethers with bis(1,2,4-tri-tert-butylcyclopentadienyl)cerium hydride does not occur by a σ-bond metathesis pathway: a combined experimental and DFT computational study

Evan L. Werkema, Ahmed Yahia, Laurent Maron,\* Odile Eisenstein\* and Richard A. Andersen\*

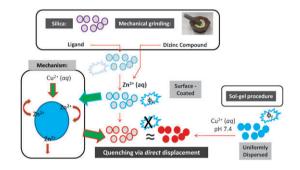
The mechanism of C–O bond cleavage in ethers is shown with reactants and observed products circled in green.

#### 2197

Mechanochemical *versus* sol-gel silica loading of phenolate- and acetate-bridged dizinc complexes: toward instant and inexpensive hybrids for controlled binding and release of Zn<sup>2+</sup> in pure water

Taehong Jun, Yonghwang Ha, Jina Kang, Snehadrinarayan Khatua and David G. Churchill\*

A chiral ligand and fluorescent dimer were mechanochemically loaded for respective off–on aqueous fluorescence detection of  ${\rm Zn}^{2^+}$  and on–off  ${\rm Cu}^{2^+}$  detection. Extensive SEM-EDS data enabled the determination of a mechanochemical loading constant.

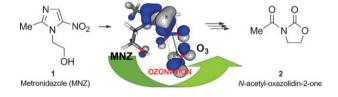


#### 2205

A convenient antibiotic indicator in the ozone treatment of wastewaters. An experimental and theoretical study

Antonio J. Mota,\* Gonzalo Prados-Joya, David Arráez-Román, Manuel Sánchez-Polo, Rafael Robles, M<sup>a</sup> Ángeles Ferro-García and José Rivera-Utrilla\*

The ozonation of nitroimidazole-type antibiotics containing wastewaters leads to stable oxazolidinone derivatives.

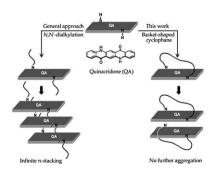


#### 2213

Basket-shaped quinacridone cyclophanes: synthesis, solid-state structures, and properties

Dingyi Yu, Tai Peng, Hongyu Zhang,\* Hai Bi, Jingying Zhang and Yue Wang\*

A comparison of luminescent efficiency in both concentrated solution and EL device with high doping concentration between basket-shaped QA cyclophanes and a non-bridged analogue clearly demonstrates that the basket-shaped bridge has the ability to effectively inhibit molecular aggregation which causes fluorescence quenching in the condensed phases.



# Published on 01 October 2010 on http://pubs.rsc.org | doi:10.1039/C0NJ90026E Downloaded on 02 January 2013

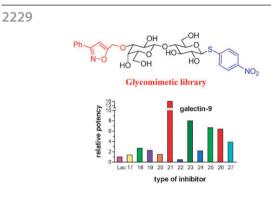
#### **PAPERS**

2220 Het X-ray diffraction Elucidation calculations of mechanisms biphenyl-(CH<sub>2</sub>) similar conditions --2,2'-diamine different structures different conditions similar structures

#### Mechanisms of reactions conducted on α-amido-α-aminonitrones, determined based on the structures of their crystalline products and DFT calculations

Bartosz Trzewik,\* Tomasz Seidler, Ewa Brocławik and Katarzyna Stadnicka

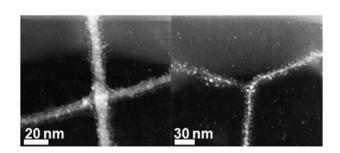
The crystal structures of various products, obtained from α-amido-α-aminonitrones, were determined and, along with DFT calculations, allowed us to elucidate the mechanisms of the reactions leading to them.



#### Synthesis and screening of a small glycomimetic library for inhibitory activity on medically relevant galactoside-specific lectins in assays of increasing biorelevance

Sabine André, Denis Giguère, Tarun K. Dam, Fred Brewer, Hans-Joachim Gabius and René Roy\*

A panel of galactoside/lactoside derivatives with pharmacophores at the aglycone and O-3/O-3' was evaluated against plant toxin and four human regulatory galectins. Differential sensitivity profiles of lectin binding showing activity increase relative to galactose/lactose were revealed.



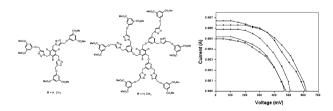
#### A facile route to self-assembled Hg//MoSI nanowire networks

Valeria Nicolosi,\* Zabeada Aslam, Kasim Sader, Gareth M. Hughes, Damjan Vengust, Neil P. Young, Ron Doole, Dragan Mihailovic, Andrew L. Bleloch, Angus I. Kirkland, Nicole Grobert and Peter D. Nellist

The chemical functionalisation of nanowires consisting of molybdenum, sulphur and iodine in conjunction with very low concentrations of molecular mercury leads to self-assembled networks of one-dimensional systems.

2247

2241



#### Synthesis of triazole dendrimers with a dimethyl isophthalate surface group and their application to dye-sensitized solar cells

Perumal Rajakumar,\* Sebastian Raja, Chinnadurai Satheeshkumar, Shanmugam Ganesan, Pichai Maruthamuthu and Samuel Austin Suthanthiraraj

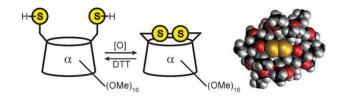
A series of novel triazole-carboxylate dendrimers were synthesized via 'click' chemistry. Optical and electrochemical properties of the dendrimers and their role in dye-sensitized solar cells are also described.



#### α-Cyclodextrins reversibly capped with disulfide bonds

Lukáš Kumprecht, Miloš Buděšínský, Petr Bouř and Tomáš Kraus\*

Permethyl- $\alpha$ -cyclodextrin capped with a disulfide linkage between the  $C6^{I}$  and  $C6^{IV}$  positions can reversibly switch between open-ended and cup-like forms by the application of external stimuli.

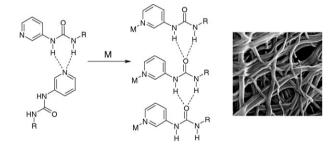


#### 2261

#### Metal-induced gelation in dipyridyl ureas

Peter Byrne, Gareth O. Lloyd, Lucas Applegarth, Kirsty M. Anderson, Nigel Clarke and Jonathan W. Steed\*

Pyridyl bis(urea) ligands form supramolecular gels in the presence of metal ions because of competition between urea—urea and urea—pyridyl hydrogen bonding interactions.

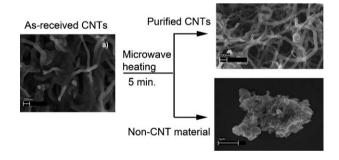


#### 2275

# The reagent-free, microwave-assisted purification of carbon nanotubes

Khalil Chajara, Claes-Henrik Andersson, Jun Lu, Erika Widenkvist and Helena Grennberg\*

We have developed an extremely fast, microwave-assisted, reagent-free method for the efficient primary purification of MW and SW carbon nanotubes. According to TGA, Raman, IR and SEM, the process rapidly yields pure nanotubes with a low degree of defects.

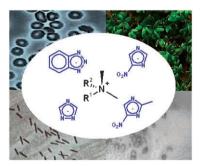


#### 2281

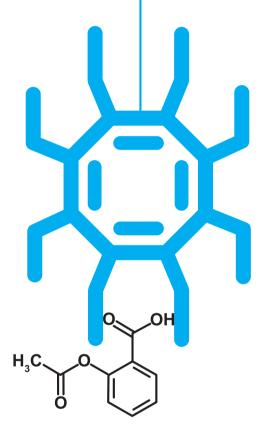
# Multifunctional long-alkyl-chain quaternary ammonium azolate based ionic liquids

Filip Walkiewicz, Katarzyna Materna, Aleksandra Kropacz, Alicja Michalczyk, Romuald Gwiazdowski, Tadeusz Praczyk and Juliusz Pernak\*

We have synthesized multifunctional quaternary ammonium azolate based ionic liquids of high practical importance.



# New adventures on the web



ChemSpider is a free online, structure centric community for chemists, providing fast access to millions of unique chemical entities, resources and information and the opportunity to collaborate with a world wide community of scientists. Rapidly becoming the richest single source of structure based chemistry information online, ChemSpider is a ground breaking initiative now supported by the RSC, the most innovative of chemical societies.

www.chemspider.com







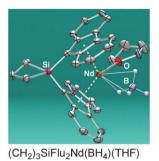


2290

Neutral *ansa*-bis(fluorenyl)silane neodymium borohydrides: synthesis, structural study and behaviour as catalysts in butadiene-ethylene copolymerisation

Guillaume Cortial, Xavier-Frederic Le Goff, Magali Bousquié, Christophe Boisson, Pascal Le Floch, François Nief\* and Julien Thuilliez

A series of new neutral *ansa*-bis(fluorenyl)silane neodymium borohydrides were found to be active in the butadiene–ethylene copolymerisation reaction; the activity of the catalyst is independent of the substituents at silicon.



2298

The transfer of neutral molecules, ions and ionic species from water to ethylene glycol and to propylene carbonate; descriptors for pyridinium cations

Michael H. Abraham\* and William E. Acree, Jr

Equations have been constructed for the transfer of neutral molecules and ions from water to ethylene glycol and to propylene carbonate; the ions include pyridinium cations that are strong hydrogen bond acids, but are not hydrogen bond bases at all.

 $C_5H_5N \rightarrow C_5H_5N-H^+$ 

2306

#### An alternative synthetic path to 1-substituted 2-naphthol

Guillermo Aldo Blanco and María Teresa Baumgartner\*

The photoinduced substitution of the 2-naphthoxide anion was carried out using diethylphosphite, benzenethiolate or 2-naphthalenethiolate anions in the presence of an electron acceptor. The corresponding products were afforded in good yield.

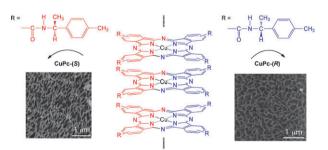
 $Nu^{-} = PO(OEt)_2$ , SPh, S(2-C<sub>10</sub>H<sub>7</sub>), carbanions



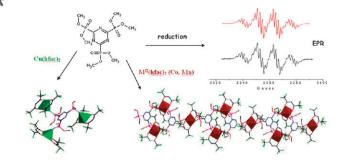
Ambidextrous optically active copper(II) phthalocyanine supramolecules induced by peripheral group homochirality

Wei Zhang,\* Akira Ishimaru, Hisanari Onouchi, Roopali Rai, Anubhav Saxena, Akihiro Ohira, Masaaki Ishikawa, Masanobu Naito and Michiya Fujiki\*

Copper(II) phthalocyanine with four chiral groups, that can form ambidextrous optically active self-assemblies in solutions, generated worm-like polymeric and circle-like structures on mica surface.



2319

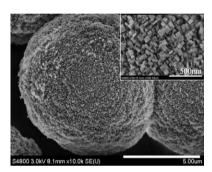


## C<sub>3</sub> symmetric tris(phosphonate)-1,3,5-triazine ligand: homopolymetallic complexes and its radical anion

Catalin Maxim, Adil Matni, Michel Geoffroy,\*
Marius Andruh, Nigel G. R. Hearns, Rodolphe Clérac and
Narcis Avarvari\*

The ligand 2,4,6-tris(dimethoxyphosphonate)-1,3,5-triazine L, for which EPR investigations and theoretical calculations have been performed on its radical anion, provided paramagnetic homopolymetallic complexes, which were structurally characterized.

2328



#### One-step synthesis of hierarchical pentasil zeolite microspheres using diamine with linear carbon chain as single template

Li Chen, Shu Yan Zhu, Yi Meng Wang\* and Ming-Yuan He

Hierarchical pentasil zeolite microspheres of 5–8 µm in size containing nanocrystals were synthesized *via* a one-step method using a diamine with a linear carbon chain as the single template.

# Annual Reports on the Progress of Chemistry

# Reviewing the latest in chemistry

Annual Reports
presents a critical
review of the
significant advances
over the last year in
inorganic, organic and
physical chemistry



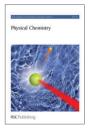
#### Annual Reports Section A: Inorganic Chemistry

Reviews organometallic and coordination chemistry, inorganic materials science, supramolecular chemistry, inorganic mechanisms, computational methods and bioinorganic chemistry.



#### Annual Reports Section B: Organic Chemistry

Reviews synthetic methodology, natural products, reaction mechanisms, bio-organic chemistry, theoretical organic chemistry and supramolecular chemistry.



#### Annual Reports Section C: Physical Chemistry

Reviews theoretical chemistry, catalytic chemistry, spectroscopic research, thermodynamics, materials chemistry and kinetics.

60989

**RSCPublishing** 

www.rsc.org/annrep