

ChemComm

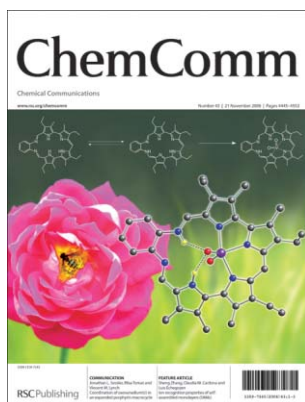
Chemical Communications

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 (43) 4445-4552 (2006)



Cover

See J. L. Sessler *et al.*, page 4486.
Just like a rose uses both its color and its perfume to attract a bee into its cavity, an oligopyrrolic macrocycle uses bimodal recognition (i.e., both covalent and hydrogen bonding) to "attract" its targeted dioxovanadium cation. Image reproduced by permission of Bojan Bato and Elisa Tomat from Jonathan L. Sessler, Elisa Tomat and Vincent M. Lynch, *Chem. Commun.*, 2006, 4486.



Inside cover

See Y. K. Gun'ko *et al.*, page 4474.
New fluorescent magnetic nanocomposites, based on magnetite nanoparticles, a polyhedral silsesquioxane and a porphyrin derivative as potential agents for MRI and biological cell imaging. Image reproduced by permission of S. A. Corr, A. O'Byrne, Y. K. Gun'ko, S. Ghosh, D. F. Brougham, S. Mitchell, Y. Volkov and A. Prina-Mello from *Chem. Commun.*, 2006, 4474.

CHEMICAL SCIENCE

C81

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, as well as the most significant scientific advances.

Chemical Science

November 2006/Volume 3/Issue 11

www.rsc.org/chemicalscience

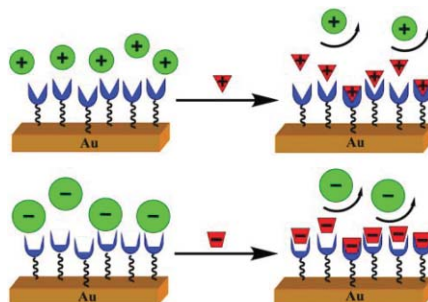
FEATURE ARTICLE

4461

Ion recognition properties of self-assembled monolayers (SAMs)

Sheng Zhang, Claudia M. Cardona and Luis Echegoyen*

In the search for new sensors, self-assembled monolayers (SAMs) have gained intensive interest due to their size, highly-ordered structures, and molecular recognition properties. This article presents an overview of ion recognition at SAM-modified electrode/solution interfaces, and brings up to date the most notable examples of ionic sensing.



EDITORIAL STAFF

Editor

Sarah Thomas

Deputy editor

Kathryn Sear

Assistant editors

Sarah Dixon, Nicola Nugent, Alison Stoddart,
Katherine Vickers, Jenna Wilson

Publishing assistants

Jackie Cockrill, Jayne Drake, Jayne Gough,
Rachel Hegarty

Team leader, serials production

Helen Saxton

Technical editors

Celia Clarke, Laura Howes, Sandra Jones,
Caroline Moore, David Parker, Michael Smith,
Ken Wilkinson

Administration coordinator

Sonya Spring

Editorial secretaries

Lynne Braybrook, Donna Fordham, Jill Segev,
Julie Thompson

Publisher

Graham M^c Cann

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

© The Royal Society of Chemistry, 2006. 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

EDITORIAL BOARD

Chairman

Roeland J. M. Nolte, Nijmegen, The Netherlands
nolte@sci.kun.nl

Associate Editors

P. Andrew Evans, Bloomington, USA
chemcomm@indiana.edu

Barbara Imperiali, Cambridge, USA
chemcomm@mit.edu

Jonathan L. Sessler, Austin, USA
chemcomm@cm.utexas.edu

T. Don Tilley, Berkeley, USA
chemcomm@berkeley.edu

Scientific Editors

Alois Fürstner, Mülheim, Germany
fuerstner@mpi-muelheim.mpg.de

Donald Hilvert, Zürich, Switzerland
hilvert@org.chem.ethz.ch

Mir Wais Hosseini, Strasbourg, France
hosseini@chimie.u-strasbg.fr

Dermot O'Hare, Oxford, UK
chemcomm@chem.ox.ac.uk

Members

Shankar Balasubramanian, Cambridge, UK
sb10031@cam.ac.uk

Hans-Ulrich Blaser, Solvias AG, Switzerland
hans-ulrich.blaser@SOLVIAS.com

David Haddleton, Warwick, UK
D.M.Haddleton@warwick.ac.uk

Nazario Martín, Madrid, Spain
nazmar@quim.ucm.es

Ryong Ryoo, Taejeon, Korea
rryoo@kaist.ac.kr

Ferdinand Schüth, Mülheim, Germany
schueth@mpi-muelheim.mpg.de

EDITORIAL ADVISORY BOARD

Varinder Aggarwal, Bristol, UK

Takuzo Aida, Tokyo, Japan

Frank Allen, CCDC, Cambridge, UK

Jerry L. Atwood, Columbia, USA

Amit Basak, Kharagpur, India

Dario Braga, Bologna, Italy

Jillian M. Buriak, Alberta, Canada

Derrick Clive, Alberta, Canada

Marcetta Darensbourg, College Station, USA

Shaojun Dong, Changchun, China

Chris Easton, Canberra, Australia

Gregory C. Fu, Cambridge, USA

Tohru Fukuyama, Tokyo, Japan

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

Taeghwan Hyeon, Seoul, Korea

Biao Jiang, Shanghai, China

Kimoon Kim, Pohang, Korea

Susumu Kitagawa, Kyoto, Japan

Shu Kobayashi, Tokyo, Japan

Kazuyuki Kuroda, Tokyo, Japan

Jérôme Lacour, Geneva, Switzerland

Teck-Peng Loh, Singapore

Tien-Yau Luh, Taipei, Taiwan

Doug MacFarlane, Monash, Australia

David MacMillan, Pasadena, USA

Seth Marder, Georgia, USA

Keiji Maruoka, Kyoto, Japan

E. W. 'Bert' Meijer, Eindhoven, The Netherlands

Jason Micklefield, Manchester, UK

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, Alabama, USA

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, PR China

Eiji Yashima, Nagoya, Japan

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.

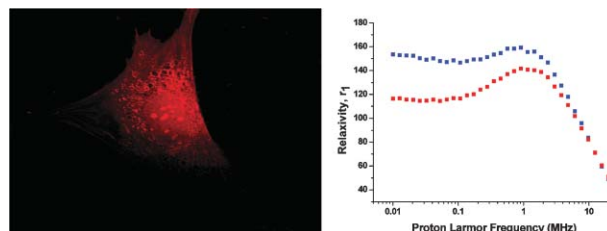
Authors may reproduce/republish portions of their published contribution without seeking permission from the RSC, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of The Royal Society of Chemistry.

4474

Magnetic-fluorescent nanocomposites for biomedical multitasking

Serena A. Corr, Aisling O' Byrne, Yurii K. Gun'ko,* Swapankumar Ghosh, Dermot F. Brougham, Siobhan Mitchell, Yuri Volkov and Adriele Prina-Mello

Fluorescent magnetite nanocomposites based on magnetic nanoparticles, a polyhedral octaaminopropylsilsesquioxane and a porphyrin derivative have been prepared. The intracellular uptake of the nanocomposites by macrophage and bone osteoblast cells, and their potential as MRI contrast agents, has been demonstrated.

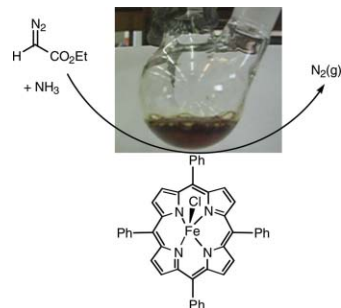


4477

Iron porphyrins catalyze the synthesis of non-protected amino acid esters from ammonia and diazoacetates

Iris Aviv and Zeev Gross*

The iron complexes of porphyrins are the first reported metal complexes to catalyze the formation of N-free glycine and alanine esters from ammonia and diazoesters.

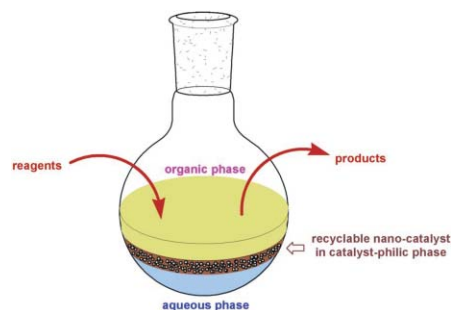


4480

Triphasic liquid systems: generation and segregation of catalytically active Pd nanoparticles in an ammonium-based catalyst-philic phase

Alvise Perosa,* Pietro Tundo, Maurizio Selva and Patrizia Canton

A triphasic liquid system made from organic, aqueous, and ammonium phases was used to form and stabilize Pd-nanoparticles, which remained segregated in the ammonium phase, catalysed organic reactions, and could be recycled.

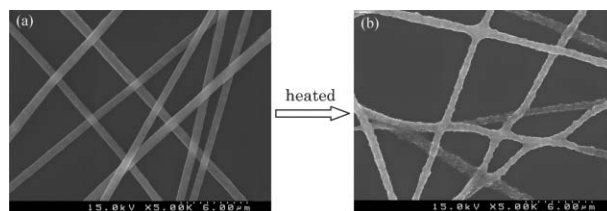


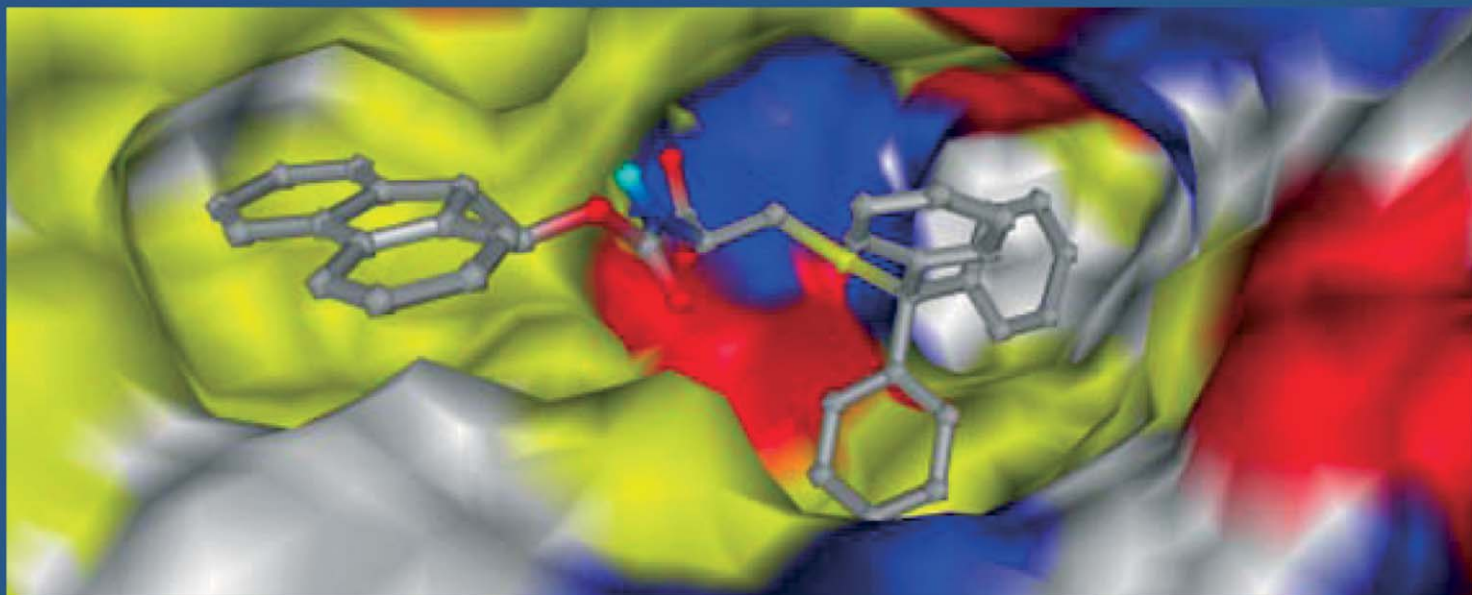
4483

Fibrous TiO₂-SiO₂ nanocomposite photocatalyst

Ming Jin, Xintong Zhang, Alexei V. Emeline, Zhaoyue Liu, Donald A. Tryk, Taketoshi Murakami and Akira Fujishima*

The electrospinning method is employed to prepare the photocatalyst, in which Degussa P25 TiO₂ nanoparticles are embedded in the body of SiO₂ fibers with a netlike structure formed during the calcination process.





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 Barbara Imperiali US Associate Editor for chemical biology

Professor Imperiali is the Class of 1922 Professor of Chemistry and Professor of Biology at Massachusetts Institute of Technology (MIT). Her research interests are concerned with the diverse aspects of protein structure, function and design. A multidisciplinary approach involving synthesis, state-of-the-art spectroscopy, molecular modelling, enzymology and molecular biology is employed to address fundamental problems at the interface of chemistry and biology.

Happy to receive papers on important developments in chemical biology, Professor Imperiali can be contacted via chemcomm@mit.edu



25080690-c

RSC Publishing

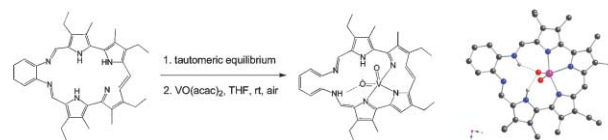
www.rsc.org/chemcomm

4486

Coordination of oxovanadium(V) in an expanded porphyrin macrocycle

Jonathan L. Sessler,* Elisa Tomat and Vincent M. Lynch

The formation of a dioxovanadium(V) complex of an expanded porphyrin-type Schiff base macrocycle is reported; the tetrapyrrolic ligand undergoes a tautomeric rearrangement which permits a bimodal recognition of the nonspherical cationic guest.

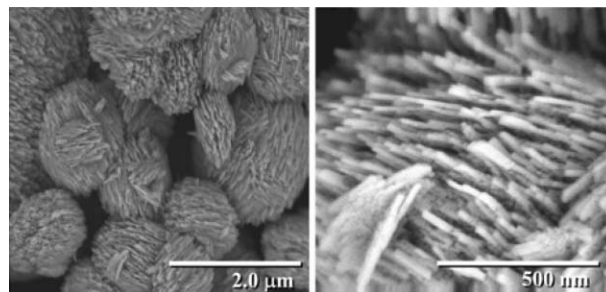


4489

Mesoporous materials with zeolite framework: remarkable effect of the hierarchical structure for retardation of catalyst deactivation

Rajendra Srivastava, Minkee Choi and Ryong Ryoo*

MFI zeolite with mesoporous/microporous hierarchical structure showed remarkably high resistance to catalyst deactivation in various acid-catalyzed reactions.

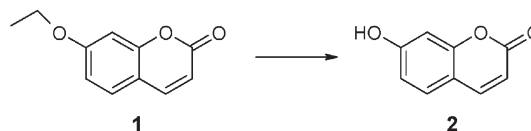


4492

Probing the substrate specificity of the catalytically self-sufficient cytochrome P450 RhF from a *Rhodococcus sp.*

Ayhan Çelik, Gareth A. Roberts, John H. White, Stephen K. Chapman, Nicholas J. Turner and Sabine L. Flitsch*

Analysis of the substrate specificity of the self-sufficient cytochrome P450 RhF revealed that the enzyme tends to catalyse the dealkylation of substituted alkyl-aryl ethers with shorter alkyl moieties more readily than equivalent compounds with longer alkyl groups.

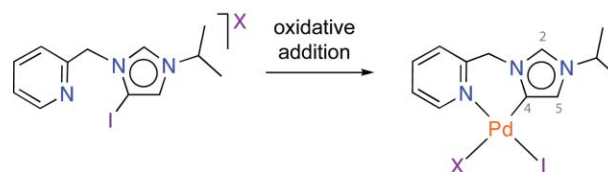


4495

Mild and rational synthesis of palladium complexes comprising C(4)-bound *N*-heterocyclic carbenes

Evelyne Kluser, Antonia Neels and Martin Albrecht*

Oxidative addition of 4-iodoimidazolium salts to palladium(0) provides a mild and potentially general route to carbene complexes in which metal bonding occurs non-classically at C(4) rather than at C(2).



KEYSTONE SYMPOSIA

Keystone Symposia on Molecular and Cellular Biology

GLOBAL HEALTH SERIES

Breaking the Cycle of Infectious Disease

Supported by the Bill & Melinda Gates Foundation



Call For Global Health Award Applications

Drugs Against Protozoan Parasites

Organizers: Daniel E. Goldberg, R. Kip Guy and Stephen A. Ward
January 28 - February 1, 2007
Granlibakken Resort • Tahoe City, California
Application Deadline: October 27, 2006
www.keystonesymposia.org/B1

Immunologic Memory

Organizers: Robert A. Seder, Susan L. Swain, Rafi Ahmed and Antonio Lanzavecchia
March 3 - 8, 2007
Eldorado Hotel & Spa • Santa Fe, New Mexico
Application Deadline: November 3
www.keystonesymposia.org/C4

Tuberculosis: From Lab Research to Field Trials

Organizers: Stefan H.E. Kaufmann, Issar Smith and Carl F. Nathan
March 20 - 25, 2007
Fairmont Hotel Vancouver • Vancouver, British Columbia
Application Deadline: Nov 20, 2006
www.keystonesymposia.org/C6

HIV Vaccines: From Basic Research to Clinical Trials

Sponsored by Wyeth Vaccines Research
Organizers: Dennis R. Burton, Alexandra Trkola and David I. Watkins
March 25 - 30, 2007
Whistler Resort • Whistler, British Columbia
Application Deadline: Nov 27, 2006
www.keystonesymposia.org/X7

Molecular and Cellular Determinants of HIV Pathogenesis

Organizers: Michael H. Malim, Julie M. Overbaugh and Robert W. Doms
March 25 - 30, 2007
Whistler Resort • Whistler, British Columbia
Application Deadline: Nov 27, 2006
www.keystonesymposia.org/X8

For more information about the application process, please visit
<http://www.keystonesymposia.org/globalhealth>

Global Health Series Travel Awards are to assist attendance of scientists, physicians, fellows, or students from countries where the meeting topic health problems are indigenous. The purpose of providing travel awards is to add to the diversity of experiences represented by participants at each meeting.

Awards will be based on review of application content by the CEO and CSO of the Keystone Symposia. The amount of the awards will vary, depending on where awardees are coming from and the extent of their need.

The award will cover conference related expenses to include: registration fee, lodging, airfare and ground transportation from host airport to the resort. Awardee should be prepared for any unexpected costs of travel, such as those associated with flight changes, that may arise. The awardee accepts responsibility for such costs.

Keystone Symposia encourages all eligible applicants to apply for these valuable awards. Scientists and clinicians from affected countries are valued and crucial colleagues in our mission to advance the life sciences and accelerate discoveries that benefit society.

Eligibility:

To be eligible for a Global Health Travel Award, you must:

Originate from a nation affected by the health problem of the meeting topic. Preference will be given to individuals traveling from and returning to affected nations, or individuals currently studying in one country, but planning to return to work in an affected nation. Per the terms of this award, employees of the National Institutes of Health are not eligible.

Keystone Symposia

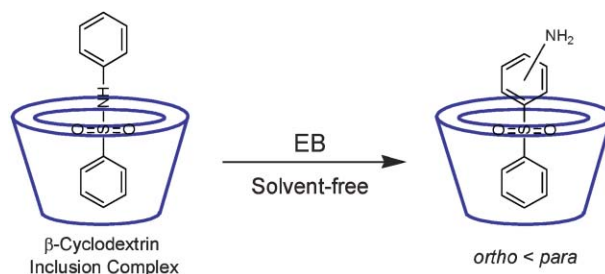
221 Summit Place #272, PO Box 1630 • Silverthorne, CO 80498 • www.keystonesymposia.org • 800-253-0685 • 970-262-1230
Keystone Symposia on Molecular and Cellular Biology, a 501(c)(3) Nonprofit Organization Directed and Supported by The Scientific Community

4498

Regioselectivity control of radiation-induced reaction: electron beam-induced Fries rearrangement of sulfonamide within a β -cyclodextrin inclusion complex

Jun Kato,* Hiroyuki Kakehata, Yasunari Maekawa and Takashi Yamashita

Solvent-free EB-Fries rearrangement proceeded at a shorter reaction time with reversed regioselectivity by inclusion into the β -CD, compared with that of sulfonamide crystals; the β -CD as a restricted nanospace had a large effect on the reactivity and regioselectivity of the solvent-free EB-Fries rearrangement.

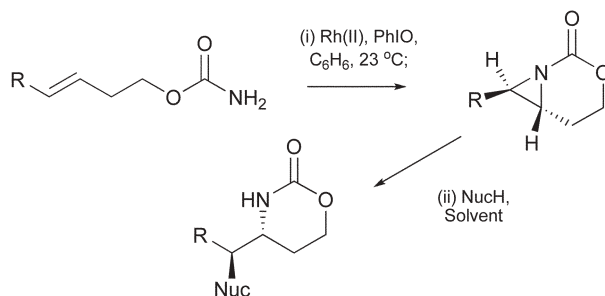


4501

Rh(II)-catalysed room temperature aziridination of homoallyl-carbamates

Christopher J. Hayes,* Peter W. Beavis and Lesley A. Humphries

A rhodium(II)-catalysed method has been developed for the intramolecular aziridination of homo-allylic carbamates. Ring opening of the carbamate tethered aziridines occurs at the C4 position, providing functionalized 6-membered ring opened products.

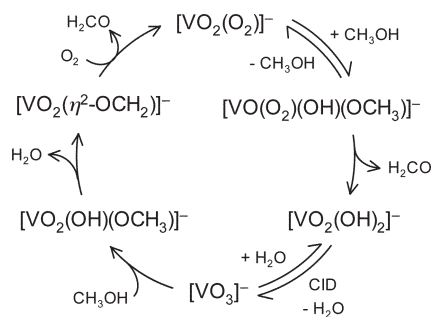


4503

Mononuclear metavanadate catalyses gas phase oxidation of methanol to formaldehyde employing dioxygen as the terminal oxidant

Tom Waters, George N. Khairallah, Samantha A. S. Y. Wimala, Yien C. Ang, Richard A. J. O'Hair* and Anthony G. Wedd

Multistage mass spectrometry experiments reveal a cycle of gas phase reactions for the oxidation of methanol to formaldehyde with a mononuclear oxo vanadate anion as the catalyst and dioxygen as the terminal oxidant.

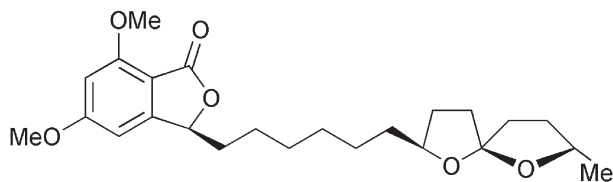


4506

Synthesis of the spiroacetal-containing anti-*Helicobacter pylori* agents CJ-12,954 and CJ-13,014

Margaret A. Brimble* and Christina J. Bryant

The first synthesis of the spiroacetal-containing anti-*Helicobacter pylori* agents CJ-12,954 and CJ-13,014 is reported, allowing assignment of the absolute stereochemistry of the natural products.



RSC online shop now open

And to celebrate we're having a sale...

The RSC online shop gives you continuous access to class leading products and services, expertly tailored to cater for your training and educational needs.

Browse: visit our shop to browse over 400 book titles, subscribe or purchase an individual article in one of our journals, register to attend a conference or one of our training events.

Gift Ideas: if you're looking for gift ideas, look no further. In our online shop you'll find everything from popular science books like *The Age of the Molecule* and the inspirational *Elegant Solutions* from award winning writer, Philip Ball, to our stunning Visual Elements wall chart and brain-teasing *Chemistry Su Doku* and *Crosswords* puzzle series.

Sale Now On: shop online during November and December and get a huge **25% discount*** on all books, puzzles/games, videos or wall charts purchased.

* Discount applied to your purchases when you check out.
Offer ends December 31st, 2006

RSC is a not for profit organisation. Revenue generated from collecting membership subscriptions, conference registration fees or through sales of our products is invested to support chemical science initiatives across the world.

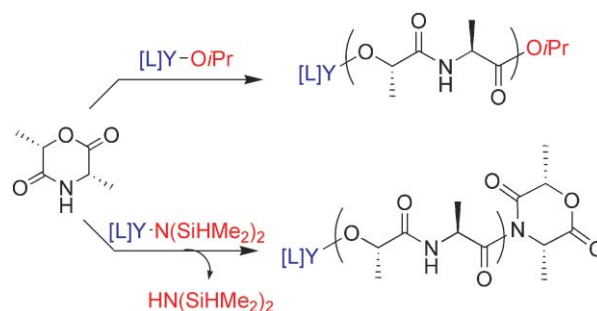
Registered Charity Number: 207890

4509

Ring-opening polymerization of 3,6-dimethyl-2,5-morpholinedione with discrete amino-alkoxy-bis(phenolate) yttrium initiators: mechanistic insights

Pascal M. Castro, Gang Zhao, Abderramane Amgoune, Christophe M. Thomas and Jean-François Carpentier*

Well-defined yttrium amide and alkoxide complexes promote the ring-opening polymerization of a model 2,5-morpholinedione at 60–100 °C via a coordination-insertion polymerization mechanism, as evidenced by MALDI-TOF-MS.

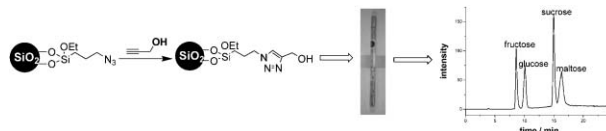


4512

Click chemistry: a new facile and efficient strategy for preparation of functionalized HPLC packings

Zhimou Guo, Aiwen Lei,* Xinmiao Liang* and Qing Xu

Click chemistry has been successfully extended into the field of preparation of functionalized HPLC packings. The potential has been demonstrated by the preparation of “Click I–IV” columns and preliminary results in the separation of sugars.

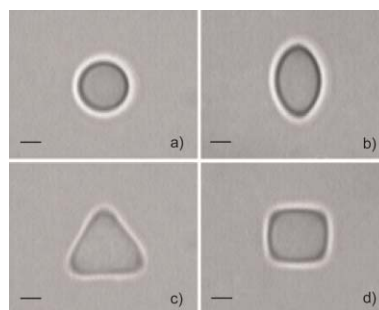


4515

Optical sculpture: controlled deformation of emulsion droplets with ultralow interfacial tensions using optical tweezers

Andrew D. Ward,* Mark G. Berry, Christopher D. Mellor and Colin D. Bain*

Micron-sized emulsion droplets with ultralow surface tension are deformed into a range of geometric shapes using picoNewton optical forces applied by multiple optical traps.

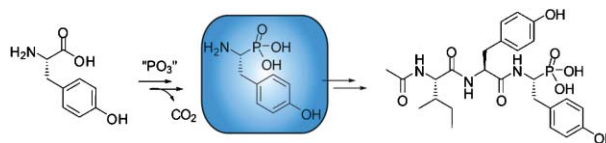


4518

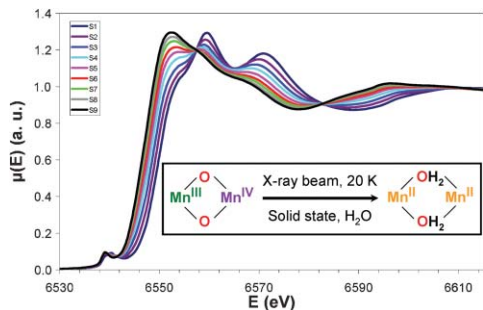
Phosphonopeptide K-26 biosynthetic intermediates in *Astrosporangium hypotensionis*

Ioanna Ntai, Vanessa V. Phelan and Brian O. Bachmann*

The nonproteinogenic amino acid (*R*)-1-amino-2-(4-hydroxyphenyl)ethylphosphonic acid was synthesized in ¹³C₂-labeled form and its intermediacy in the biosynthesis of the natural phosphonopeptide K-26 was validated by incorporation studies.



4521

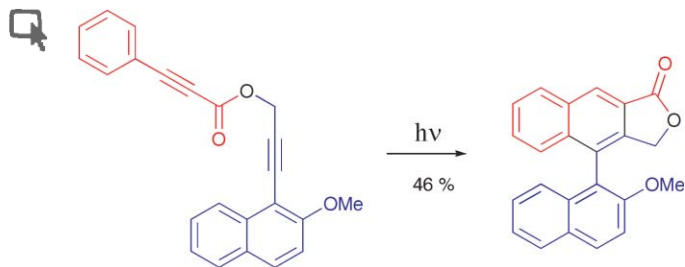


X-Ray photoreduction of a di(μ -oxo) $Mn^{III}Mn^{IV}$ complex occurs at temperatures as low as 20 K

Lionel Dubois, Lilian Jacquamet, Jacques Pécaut and Jean-Marc Latour*

Full reduction of the $Mn^{III}(\mu-O)_2Mn^{IV}$ core to $Mn^{II}(\mu-OH_2)_2Mn^{II}$ is observed upon irradiation by an X-ray beam at *ca.* 20 K.

4524

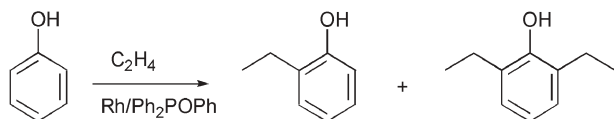


Synthesis of 1,1'-binaphthyls by *photo-dehydro*-Diels–Alder reactions

Pablo Wessig* and Gunnar Müller

The *photo-dehydro*-Diels–Alder reaction has proved to be a powerful method for the preparation of 1,1'-binaphthyls.

4527



Halide-free ethylation of phenol by multifunctional catalysis using phosphinite ligands

M. Carmen Carrión and David J. Cole-Hamilton*

Phenol is catalytically *ortho*-alkylated by C–H activation, with significant steps occurring at the metal and at the P atom of phosphinite ligands.

4530



Metal-free catalysis of sustainable Friedel–Crafts reactions: direct activation of benzene by carbon nitrides to avoid the use of metal chlorides and halogenated compounds

Frederic Goettmann, Anna Fischer, Markus Antonietti and Arne Thomas*

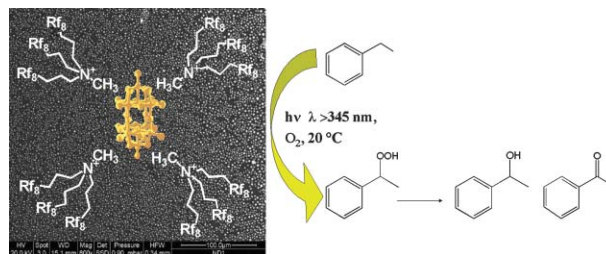
The use of mesoporous C_3N_4 for the activation of benzene enables more sustainable Friedel–Crafts type reaction by using alcohols, formic acid and even quaternary ammoniums or urea as electrophiles.

4533

Solvent-free, heterogeneous photooxygenation of hydrocarbons by Hyflon[®] membranes embedding a fluoros-tagged decatungstate

Mauro Carraro, Martino Gardan, Gianfranco Scorrano, Enrico Drioli, Enrica Fontananova and Marcella Bonchio*

Hybrid fluoropolymeric membranes with 25% loading of the fluoros-tagged $(R_fN)_4W_{10}O_{32}$ effect the solvent-free photooxygenation of benzylic C–H bonds with up to 6100 TONs in 4 hours.

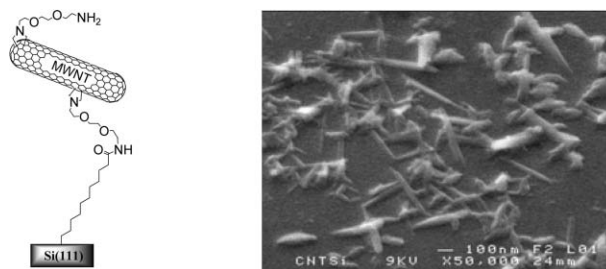


4536

Carbon nanotube-functionalized silicon surfaces with efficient redox communication

Fanny Hauquier, Giorgia Pastorin, Philippe Hapiot, Maurizio Prato,* Alberto Bianco* and Bruno Fabre*

Functionalized multi-walled carbon nanotubes (MWNTs) were covalently bound to a silicon surface and such MWNT assemblies allowed an efficient electrical communication between the underlying semiconductor and a redox probe in solution.

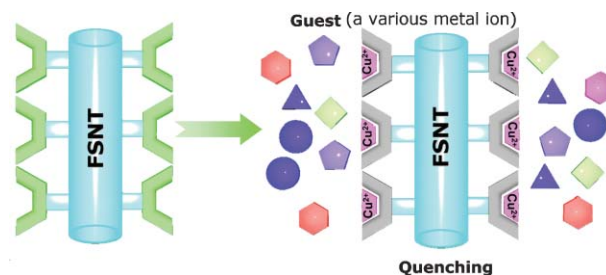


4539

Organic–inorganic hybrid nanomaterial as a new fluorescent chemosensor and adsorbent for copper ion

Soo Jin Lee, Shim Sung Lee, Myoung Soo Lah, Jae-Min Hong and Jong Hwa Jung*

Functionalized silica nanotube (FSNT) possessing the phenanthroline moiety as a fluorescent receptor and adsorbent for Cu^{2+} was fabricated by sol–gel reaction. The FSNT showed the high selective binding ability of FSNT for only Cu^{2+} .

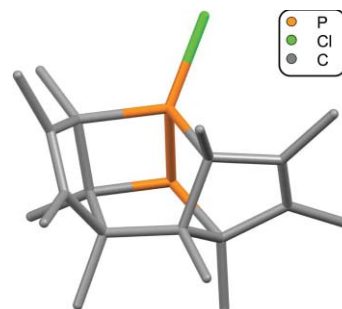


4542

The surprising and stereoselective formation of P_2C_{10} cages by the reduction of $Cp^*P_2Cl_2$

Oliver C. Presly, Michael Green, John C. Jeffery, Eva Leiner, Martin Murray, Christopher A. Russell,* Manfred Scheer* and Ulf Vogel

Reactions of $Cp^*P_2Cl_2$ with Group 13 reducing agents Ga, Al on $InCl$, result in a cascade of P–C, P–P and C–C bond forming reactions and the stereoselective formation of P_2C_{10} cages.



 Cambridge Healthtech Institute's Biomarker Series Presents:

FOURTH ANNUAL

PROTEIN BIOMARKERS 2006

November 15-16, 2006

The Loews Philadelphia Hotel • Philadelphia, PA

Comprehensive Coverage of Protein Biomarker Technologies and Applications:

Advances in FT-ICR-MS for Biomarker Discovery

From Protein Biomarkers to Clinical Diagnostics

Biomarker Identification From Complex Mixtures

Biomarkers to Predict Response to Therapy

Protein Microarrays for Biomarker Discovery

Post-Translational Modifications as Biomarkers

Cancer Biomarkers

Proteomic Data Analysis for Biomarker Identification

www.proteinbiomarkers.com



Cambridge Healthtech Institute's

BIOMARKER SERIES
for Experts by Experts

Presents...

BIOMARKERS EUROPE

8-10, November 2006

Hilton Vienna Hotel • Vienna Austria

Comprehensive Coverage of Biomarker Applications:

- **Biomarker Translation: Bridging Drug Discovery and Development**
- **Biomarkers for Compound Characterization: Earlier Safety and Efficacy Assessment**
- **Biomarkers in Early Clinical Development**
- **Biomarkers in Molecular Diagnostics**
- **Personalized Medicine and Pharmacodiagnosics**
- **Biomarker Assay Development**
- **Executive ThinkTank**

<http://www.biomarkerseries.com/europe>

Make sure to mention key code U08 AD when registering!

Cambridge Healthtech Institute, 250 First Avenue, Suite 300, Needham, Massachusetts 02494

Phone: 1-781-972-5400 or toll-free in the U.S. 888-999-6288

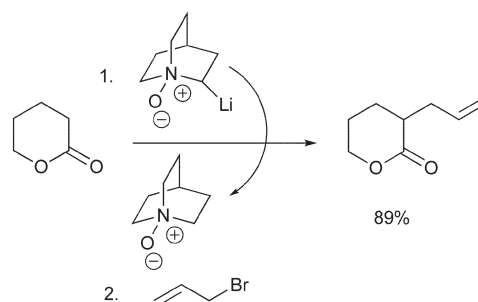
Fax: 1-781-972-5425 • Email: chi@healthtech.com

4545

α -Lithio quinuclidine *N*-oxide (Li-QNO): A new base for synthetic chemistry

Ian A. O'Neil,* Inder Bhamra and Peter D. Gibbons

In a tandem process, α -lithio quinuclidine *N*-oxide (Li-QNO) behaves as a base then an HMPA mimetic in a range of synthetically useful reactions.

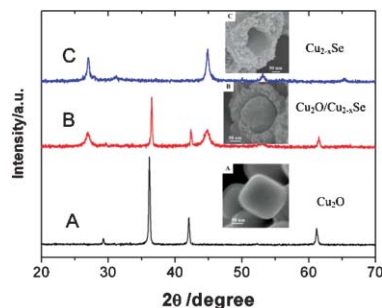


4548

Conversion of Cu_2O nanocrystals into hollow Cu_{2-x}Se nanocages with the preservation of morphologies

Hongliang Cao, Xuefeng Qian,* Jiantao Zai, Jie Yin and Zikang Zhu

Cu_{2-x}Se hollow cages were fabricated by the reaction of shape-controlled Cu_2O single-crystal templates with suitable selenium source based on the Kirkendall effect and "Ostwald ripening" process at room temperature.



A year of organic chemistry at your fingertips

Annual Reports Section B reviews key developments in organic and bio-organic chemistry including

- synthetic methodology
- reaction mechanisms
- theoretical organic chemistry
- natural products
- bio-organic chemistry
- supramolecular chemistry

About the series

Annual Reports on the Progress of Chemistry critically review significant advances in the chemical sciences, published in three sections, annually. A considerable depth of information is provided to guide readers through the most recent literature in each genre. Short, easily accessible chapters written by experts in the field make this series an excellent teaching resource.

Visit the website to see the full content, purchase this book or recommend the *Annual Reports* series to your librarian.

RSC Publishing


www.rsc.org/annrepb

AUTHOR INDEX

- Albrecht, Martin, 4495
Amgoune, Abderramane, 4509
Ang, Yien C., 4503
Antonietti, Markus, 4530
Aviv, Iris, 4477
Bachmann, Brian O., 4518
Bain, Colin D., 4515
Beavis, Peter W., 4501
Berry, Mark G., 4515
Bhamra, Inder, 4545
Bianco, Alberto, 4536
Bonchio, Marcella, 4533
Brimble, Margaret A., 4506
Brougham, Dermot F., 4474
Bryant, Christina J., 4506
Canton, Patrizia, 4480
Cao, Hongliang, 4548
Cardona, Claudia M., 4461
Carpentier, Jean-François, 4509
Carraro, Mauro, 4533
Carrión, M. Carmen, 4527
Castro, Pascal M., 4509
Çelik, Ayhan, 4492
Chapman, Stephen K., 4492
Choi, Minkee, 4489
Cole-Hamilton, David J., 4527
Corr, Serena A., 4474
Drioli, Enrico, 4533
Dubois, Lionel, 4521
Echegoyen, Luis, 4461
Emeline, Alexei V., 4483
Fabre, Bruno, 4536
Fischer, Anna, 4530
Flitsch, Sabine L., 4492
Fontananova, Enrica, 4533
Fujishima, Akira, 4483
Gardan, Martino, 4533
Ghosh, Swapankumar, 4474
Gibbons, Peter D., 4545
Goettmann, Frederic, 4530
Green, Michael, 4542
Gross, Zeev, 4477
Gun'ko, Yurii K., 4474
Guo, Zhimou, 4512
Hapiot, Philippe, 4536
Hauquier, Fanny, 4536
Hayes, Christopher J., 4501
Hong, Jae-Min, 4539
Humphries, Lesley A., 4501
Jacquamet, Lilian, 4521
Jeffery, John C., 4542
Jin, Ming, 4483
Jung, Jong Hwa, 4539
Kakehata, Hiroyuki, 4498
Kato, Jun, 4498
Khairallah, George N., 4503
Kluser, Evelyne, 4495
Lah, Myoung Soo, 4539
Latour, Jean-Marc, 4521
Lee, Shim Sung, 4539
Lee, Soo Jin, 4539
Lei, Aiwen, 4512
Leiner, Eva, 4542
Liang, Xinmiao, 4512
Liu, Zhaoyue, 4483
Lynch, Vincent M., 4486
Maekawa, Yasunari, 4498
Mellor, Christopher D., 4515
Mitchell, Siobhan, 4474
Müller, Gunnar, 4524
Murakami, Taketoshi, 4483
Murray, Martin, 4542
Neels, Antonia, 4495
Ntai, Ioanna, 4518
O'Byrne, Aisling, 4474
O'Hair, Richard A. J., 4503
O'Neil, Ian A., 4545
Pastorin, Giorgia, 4536
Pécaut, Jacques, 4521
Perosa, Alvise, 4480
Phelan, Vanessa V., 4518
Prato, Maurizio, 4536
Presly, Oliver C., 4542
Prina-Mello, Adriele, 4474
Qian, Xuefeng, 4548
Roberts, Gareth A., 4492
Russell, Christopher A., 4542
Ryoo, Ryong, 4489
Scheer, Manfred, 4542
Scorrano, Gianfranco, 4533
Selva, Maurizio, 4480
Sessler, Jonathan L., 4486
Srivastava, Rajendra, 4489
Thomas, Arne, 4530
Thomas, Christophe M., 4509
Tomat, Elisa, 4486
Tryk, Donald A., 4483
Tundo, Pietro, 4480
Turner, Nicholas J., 4492
Vogel, Ulf, 4542
Volkov, Yuri, 4474
Ward, Andrew D., 4515
Waters, Tom, 4503
Wedd, Anthony G., 4503
Wessig, Pablo, 4524
White, John H., 4492
Wimala, Samantha A. S. Y., 4503
Xu, Qing, 4512
Yamashita, Takashi, 4498
Yin, Jie, 4548
Zai, Jiantao, 4548
Zhang, Sheng, 4461
Zhang, Xintong, 4483
Zhao, Gang, 4509
Zhu, Zikang, 4548

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 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).