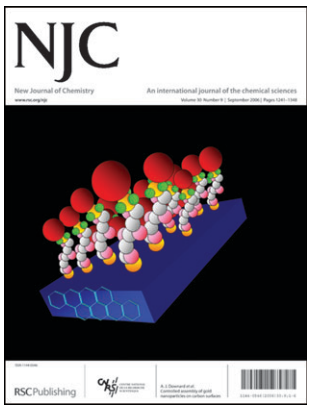
NJC

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 30(9) 1241–1348 (2006)



Cover
See Alison J. Downard *et al.*, p. 1283. Citrate-capped gold nanoparticles assemble on amine tethers, electrochemically grafted to a carbon film.
Image reproduced by permission of Alison J. Downard, Emelyn S. Q. Tan and Samuel S. C. Yu, *New J. Chem.*, 2006, **30**, 1283.

CHEMICAL SCIENCE

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.

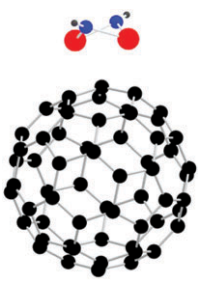
Chemical Science
September 2006/Volume 3/Issue 9
www.rsc.org/chemicalscience

PERSPECTIVE

Dinitrogen fixation and activation by Ti and Zr atoms, clusters and complexes

Navaratnarajah Kuganathan, Jennifer C. Green and Hans-Jörg Himmel*

New discoveries from the "worlds" of solution chemistry and matrix isolation shed light on dinitrogen activation by the early transition metal elements Ti and Zr and their potential applications.



NJC

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 STAFF

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

2006 Annual (print + electronic) subscription price: £711; US$1301. 2006 Annual (electronic) subscription price: £640; US$1171. 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.

PRINTED IN THE UK

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

EDITORIAL BOARD

INTERNATIONAL ADVISORY EDITORIAL BOARD

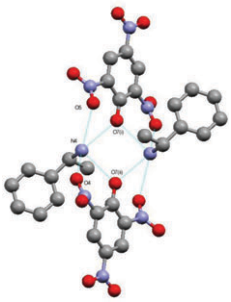
INFORMATION FOR AUTHORS

Full details of how to submit material for publication in the New Journal of Chemistry are given in the Instructions for Authors (available from http://www.rsc.org/authors). Submissions should be sent *via* ReSourCe: http://www.rsc.org/resource. 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.

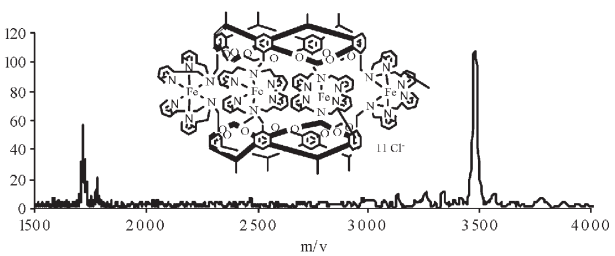
The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

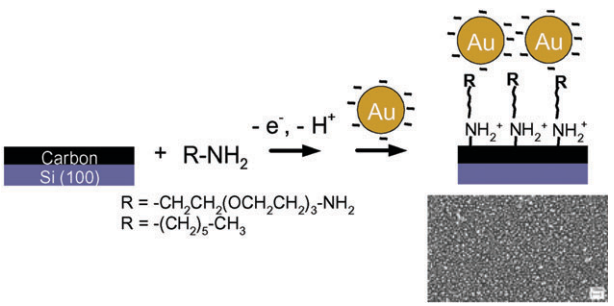
Royal Society of Chemistry: Registered Charity No. 207890

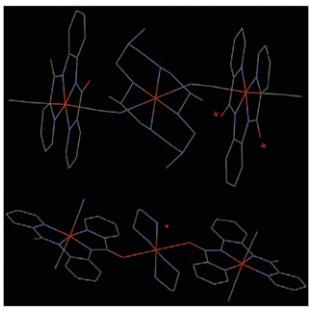
LETTER

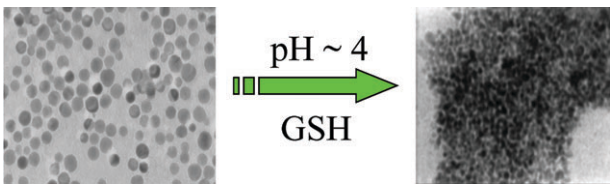


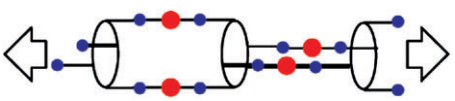
PAPERS











AUTHOR INDEX

FREE E-MAIL ALERTS AND RSS FEEDS

Contents lists in advance of publication are available on the web via www.rsc.org/njc – 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 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).

Chem Soc Rev

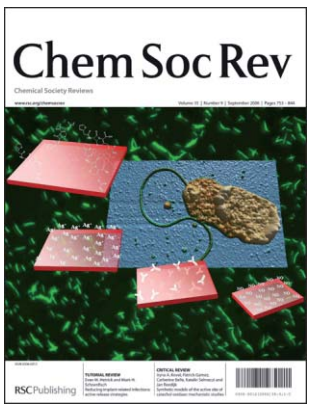
Chemical Society Reviews

www.rsc.org/chemsocrev

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

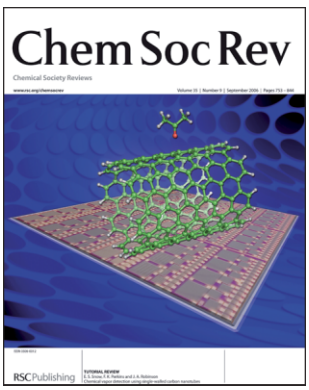
IN THIS ISSUE

ISSN 0306-0012 CODEN CSRVBR 35(9) 753–844 (2006)



Cover

See Evan M. Hetrick and Mark H. Schoenfisch, page 780. Bacterial adhesion and active release strategies to combat implant-related infections. Image reproduced by permission of Evan M. Hetrick and Mark H. Schoenfisch, *Chem. Soc. Rev.*, 2006, **35**, 780.



Inside cover

See E. S. Snow, F. K. Perkins and J. A. Robinson, page 790. An expanded view (covering 7 orders of magnitude in scale) of a wafer of chemical sensors that use networks of carbon nanotubes as the active sensor material. Image reproduced by permission of E. S. Snow, F. K. Perkins and J. A. Robinson, *Chem. Soc. Rev.*, 2006, **35**, 790.

CHEMICAL SCIENCE

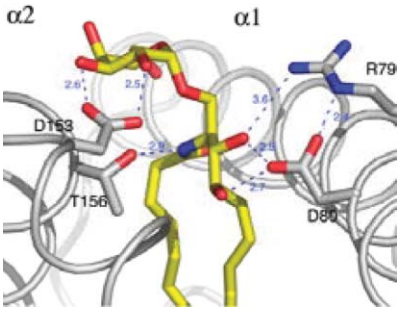
Drawing together the research highlights and news from all RSC publications, *Chemical Science* provides a 'snapshot' of the latest developments across the chemical sciences showcasing newsworthy articles, as well as the most significant scientific advances.

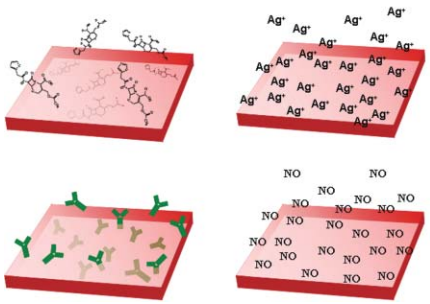
Chemical Science

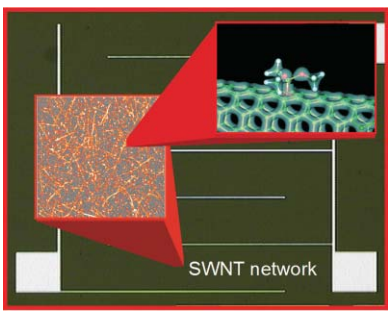
September 2006/Volume 3/Issue 9

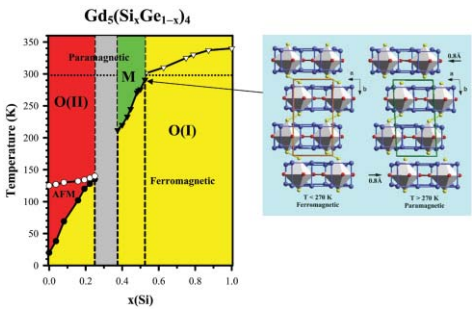
www.rsc.org/chemicalscience

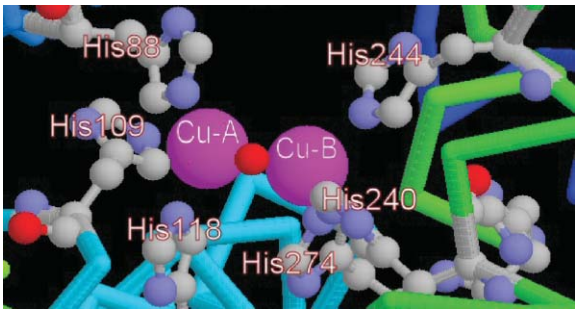
TUTORIAL REVIEWS











Synthetic models of the active site of catechol oxidase: mechanistic studies

Iryna A. Koval, Patrick Gamez, Catherine Belle, Katalin Selmeczi and Jan Reedijk*

Catechol oxidase is a type-3 copper enzyme responsible for the production of melanin, a dark pigment thought to protect a damaged tissue from pathogens. This *critical review* (citing 114 references) summarizes the past two decades of research on the active site of catechol oxidase, and extensively discusses studies on model compounds of the enzyme in order to disclose the mechanism of the enzymatic conversion.

FREE E-MAIL ALERTS AND RSS FEEDS

Contents lists in advance of publication are available on the web *via* www.rsc.org/chemsocrev - 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 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.

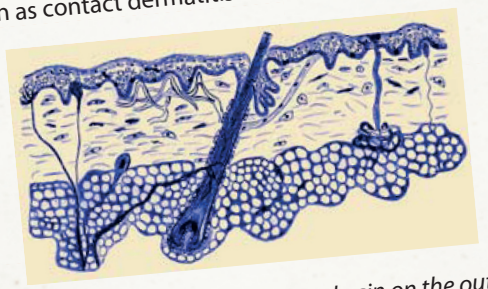
Electronic supplementary information (ESI) is available *via* the online article (see http://www.rsc.org/esi for general information about ESI).

Really readable reviews from Chem Soc Rev

Chem Soc Rev brings you a series of general interest reviews, carefully selected to give you an unrivalled overview of topical areas within the chemical sciences:

Our skin uncovered

It's our largest body organ, covering about two square metres and weighing around 5 kilogrammes. This review discusses how a deeper understanding of skin biochemistry holds the key to the development of future therapies for skin conditions such as contact dermatitis and skin cancer.



Biochemistry of human skin—our brain on the outside, D. J. Tobin, *Chem. Soc. Rev.*, 2006, **35**, 52

Fuelling the future

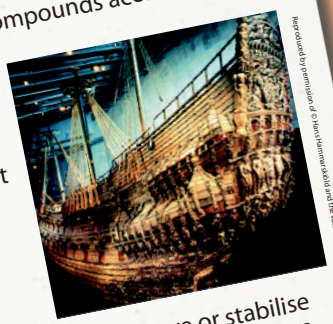
Automotive fuels are complex mixtures of hundreds, sometimes thousands, of chemical components.

Fuel composition has evolved over the past century to balance efficiency and effectiveness whilst minimising polluting emissions. Find out about current production, combustion and environmental aspects of today's fuels and take a peek into the fuels of the future.

Automotive fuels and internal combustion engines: a chemical perspective, T. J. Wallington *et al.*, *Chem. Soc. Rev.*, 2006, **35**, 335

Preserving the past

Oxidation of sulfur compounds accumulated in the wood of historical shipwrecks may cause severe acidity in the moist wood, potentially accelerating degradation of recovered archaeological artefacts. Will methods to remove or stabilise sulfur compounds in the wood save the day?



Sulfur and iron in shipwrecks cause conservation concerns, Y. Fors and M. Sandström, *Chem. Soc. Rev.*, 2006, **35**, 399

For these and more great reviews, visit the website