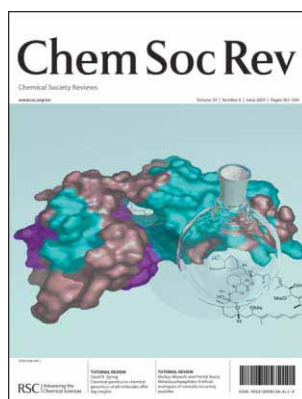


## IN THIS ISSUE

ISSN 0306-0012 CODEN CSRVBR 34(6) 461–544 (2005)

### In this issue...

Chemical Science – a 'snapshot' of the latest news and developments across the chemical sciences  
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#### Cover

See David R. Spring, p. 472.  
The chemistry – biology interface. The image includes the structure of rapamycin, the potent immunosuppressive natural product, and its ternary crystal structure with the two proteins: FK506-binding protein (FKBP-12) and the FKBP-rapamycin-associated protein (FRAP). Front cover image reproduced by permission of Dr. David R. Spring, *Chem. Soc. Rev.*, 2005, **34**, 472.

## CHEMICAL SCIENCE

C41

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

June 2005/Volume 2/Issue 6

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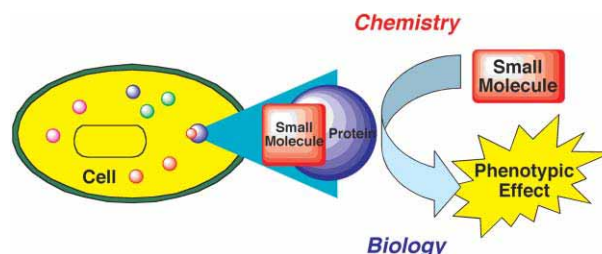
## TUTORIAL REVIEWS

472

### Chemical genetics to chemical genomics: small molecules offer big insights

David R. Spring\*

Chemical genetics involves using small molecules to explore biology. Find out how chemistry can be used to help solve complex biological problems.



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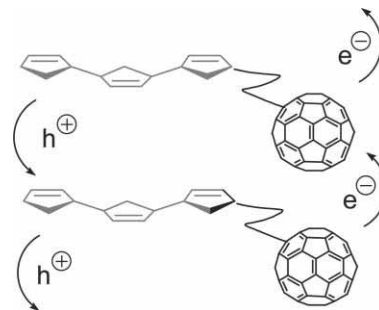
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483

### Linear $\pi$ -conjugated systems derivatized with $C_{60}$ -fullerene as molecular heterojunctions for organic photovoltaics

Jean Roncali

$C_{60}$ -derivatized  $\pi$ -conjugated polymers and oligomers designed as active materials for the fabrication of single component organic photovoltaic devices are reviewed.

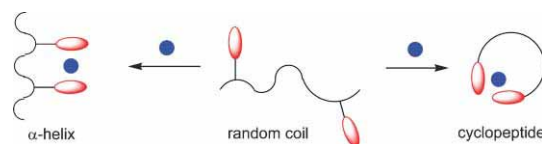


496

### Metallacyclopeptides: Artificial analogues of naturally occurring peptides

Markus Albrecht and Patrick Stortz

Metal-coordination is a valuable tool for the stabilization of peptide structures in artificial as well as natural systems.

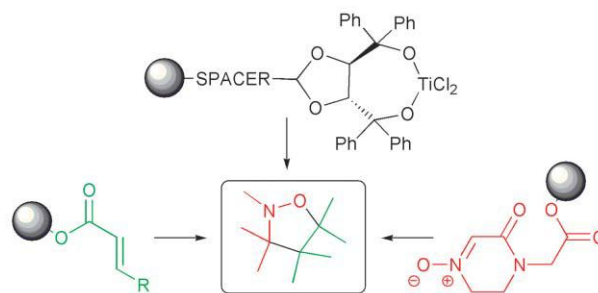


507

### 1,3-Dipolar cycloaddition on solid supports: nitron approach towards isoxazolidines and isoxazolines and subsequent transformations

Karola Rück-Braun,\* Tonia H. E. Freysoldt and Frank Wierschem

Information on intra- and intermolecular reactions, alkene vs. nitron immobilisation, reactions promoted by high pressure or for example, the use of polymer-bound catalysts.

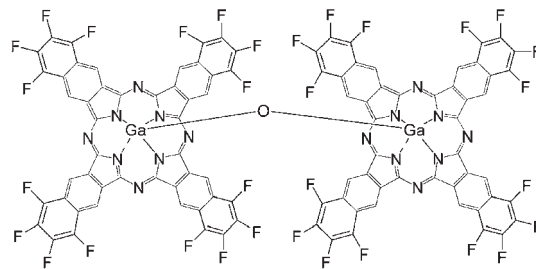


517

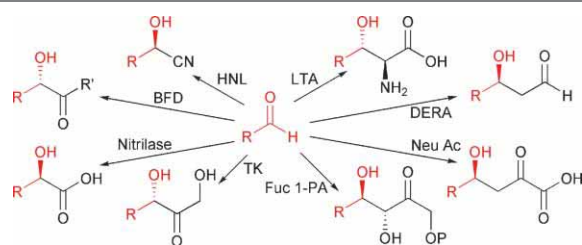
### Axially modified gallium phthalocyanines and naphthalocyanines for optical limiting

Yu Chen,\* Michael Hanack, Yasuyuki Araki and Osamu Ito

Substitution and dimerization of the phthalocyanine monomer resulted in significant reductions in the saturation energy density of the material displaying clear evidence of the usefulness of structurally modifying the gallium phthalocyanine unit. The current series presents a selection of structural modifications useful for varying their nonlinear optical properties.







### Enantioselective C–C bond synthesis catalysed by enzymes


Joly Sukumaran and Ulf Hanefeld\*

The enantioselective synthesis of C–C bonds is a major challenge in organic chemistry. This review describes straightforward approaches for these syntheses. All of them are catalysed by enzymes, proceed under mild conditions and are readily performed.

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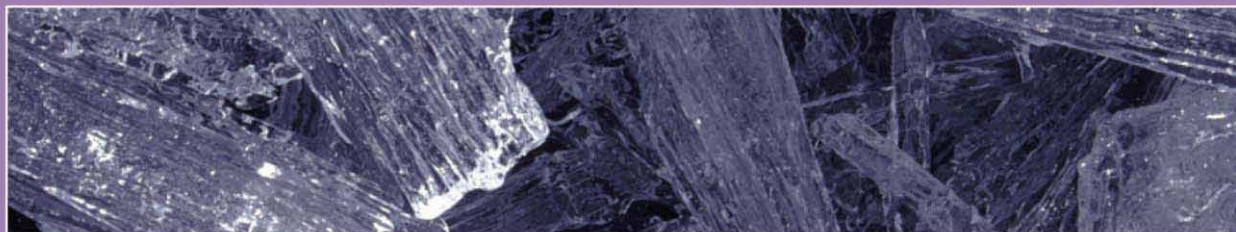
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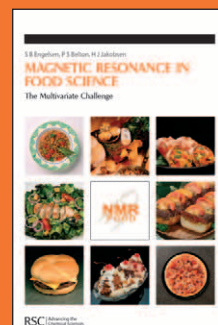
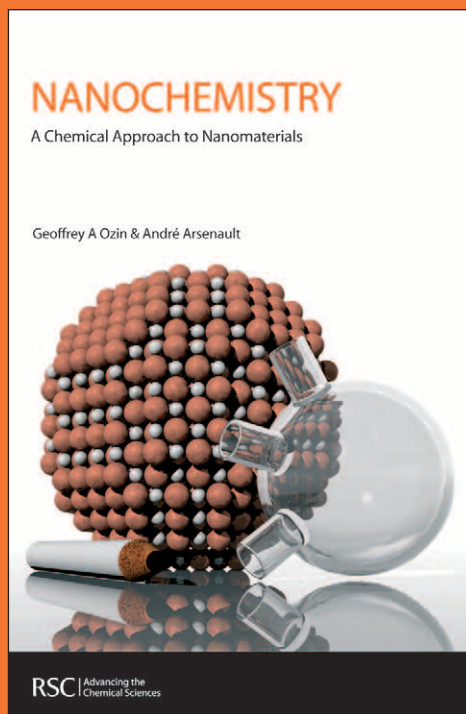
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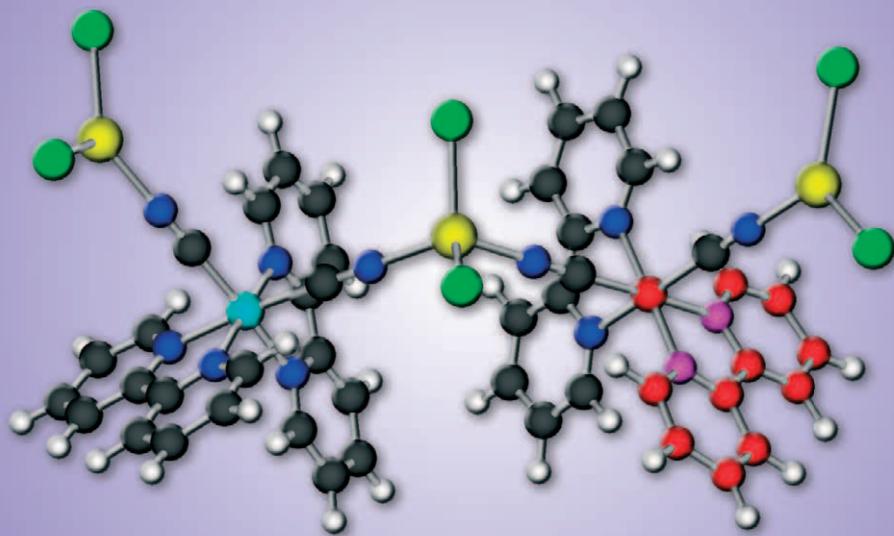
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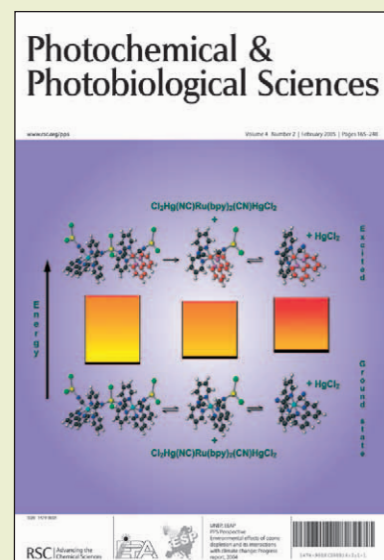


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## LETTERS

- 649 **A complex 3D 'wavy brick wall' coordination polymer based on *p*-sulfonatocalix[8]arene**  
Scott J. Dalgarno, Michael J. Hardie, Jerry L. Atwood, John E. Warren and Colin L. Raston\*
- 653 **Nanostructuring organo-silicas: combination of intermolecular interactions and molecular recognition properties to generate self-assembled hybrids with phenylene or adenine...thymine bridging units**  
Joël J. E. Moreau,\* Benoît P. Pichon, Guilhem Arrachart, Michel Wong Chi Man and Catherine Bied

## PAPERS

- 659 **Nucleophilic and electrophilic displacements on covalently modified carbon: introducing 4,4'-bipyridinium on grafted glassy carbon electrodes**  
Allan Hjarbæk Holm, Rikke Møller, Karina Højrup Vase, Mingdong Dong, Kion Norrman, Flemming Besenbacher, Steen Utrup Pedersen\* and Kim Daasbjerg\*
- 667 **A series of new polyoxoanion-based inorganic-organic hybrids:  $(\text{C}_6\text{NO}_2\text{H}_5)[(\text{H}_2\text{O})_4(\text{C}_6\text{NO}_2\text{H}_5)\text{Ln}(\text{CrMo}_6\text{H}_6\text{O}_{24})] \cdot 4\text{H}_2\text{O}$  (Ln = Ce, Pr, La and Nd) with a chiral layer structure**  
Haiyan An, Dongrong Xiao, Enbo Wang,\* Yangguang Li and Lin Xu
- 673 **Anion transport in liposomes responds to variations in the anchor chains and the fourth amino acid of heptapeptide ion channels**  
Riccardo Ferdani, Robert Pajewski, Natasha Djedović, Jolanta Pajewska, Paul H. Schlesinger and George W. Gokel\*
- 681 **Algal polysaccharide capsule-templated growth of magnetic nanoparticles**  
Roberta Brayner,\* Thibaud Coradin, Françoise Fiévet-Vincent, Jacques Livage and Fernand Fiévet
- 686 **Synthesis of non-substituted phthalocyanines by standard and non-standard techniques. Influence of solvent nature in phthalocyanine preparation at low temperature by UV-treatment of the reaction system**  
B. I. Kharisov,\* U. Ortiz Méndez, J. L. Almaraz Garza and J. R. Almaguer Rodríguez
- 693 **Potassium melonate,  $\text{K}_3[\text{C}_6\text{N}_7(\text{NCN})_3] \cdot 5\text{H}_2\text{O}$ , and its potential use for the synthesis of graphite-like  $\text{C}_3\text{N}_4$  materials**  
Elisabeta Horvath-Bordon, Edwin Kroke,\* Ingrid Svoboda, Hartmut Fuess and Ralf Riedel
- 700 **Synthesis and characterization of ionic liquids based upon 1-butyl-2,3-dimethylimidazolium chloride/ $\text{ZnCl}_2$**   
Vincent Lecocq, Aurélie Graille, Catherine C. Santini,\* Anne Baudouin, Yves Chauvin, Jean Marie Basset, Laurence Arzel, Denis Bouchu and Bernard Fenet



- 707 **Mixed alkylthiophene-based heterocyclic polymers containing oxadiazole units *via* electrochemical polymerisation: spectroscopic, electrochemical and spectroelectrochemical properties**  
Alexander S. Fisyuk, Renaud Demadrille, Claudia Querner, Malgorzata Zagorska, Joël Bleuse and Adam Pron\*
- 714 **Synthesis, X-ray characterization and study of new ionic complexes of 2-pyridone, obtained by oxidation with I<sub>2</sub>**  
Constantinos D. Antoniadis, Sotiris K. Hadjikakou,\* Nick Hadjiliadis,\* Maciej Kubicki and Ian S. Butler
- 721 **Synthesis and characterization of two metal phosphonates with 3D structures: Cu<sup>I</sup><sub>2</sub>Cu<sup>II</sup>[(3-C<sub>5</sub>H<sub>4</sub>N)CH(OH)PO<sub>3</sub>]<sub>2</sub> and Zn[(3-C<sub>5</sub>H<sub>4</sub>N)CH(OH)PO<sub>3</sub>]**  
Deng-Ke Cao, Yong-Jiang Liu, You Song and Li-Min Zheng\*
- 726 **Synthesis and solvent effects on the spectroscopic properties of octatosylamido phthalocyanines**  
Fatma Yüksel, Ayşe Gül Gürek, Colette Lebrun and Vefa Ahsen\*
- 733 **Microwave approach for the synthesis of rhabdophane-type lanthanide orthophosphate (Ln = La, Ce, Nd, Sm, Eu, Gd and Tb) nanorods under solvothermal conditions**  
Chitta Ranjan Patra, Gabashvili Alexandra, Sujata Patra, David Solomon Jacob, Aharon Gedanken,\* Asher Landau and Yossi Gofer
- 740 **Superoxide dismutase activity of a Cu–Zn complex—bare and immobilised**  
I. Szilágyi, I. Labádi, K. Hernadi, I. Pálinkó,\* I. Fekete, L. Korecz, A. Rockenbauer and T. Kiss