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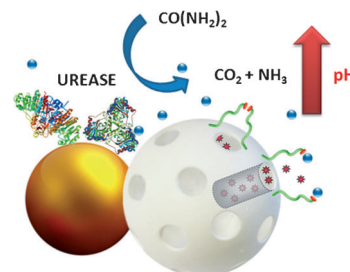


### Controlled Release

R. Villalonga,\* P. Díez, A. Sánchez, E. Aznar, R. Martínez-Máñez, J. M. Pingarrón\*

Enzyme-Controlled Sensing–Actuating Nanomachine Based on Janus Au–Mesoporous Silica Nanoparticles

**Janus-nanoparticle-based nanomachine:** This article reports an integrated sensing–actuating nanomachine based on Janus Au–mesoporous silica nanoparticles with gatelike scaffolding for enzyme-controlled cargo release (see figure).



Chem. Eur. J.  
DOI: 10.1002/chem.201300723

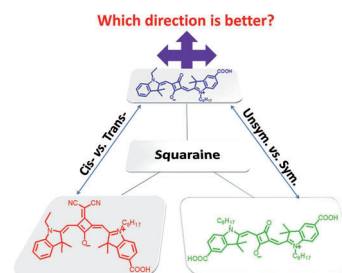


### Solar Cells

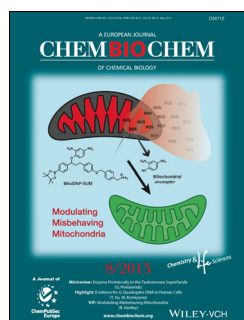
C. Qin, W.-Y. Wong,\* L. Han\*

Squaraine Dyes for Dye-Sensitized Solar Cells: Recent Advances and Future Challenges

**Toward NIR response:** Recent progress in squaraine dyes has led to a rapid increase in the energy conversion efficiency of dye-sensitized solar cells. Squaraine dyes are also a promising candidate as near-infrared (NIR) co-sensitizers in co-sensitized solar cells. In this Focus Review, we highlight some recent advances of squaraine sensitizers and their applications in dye-sensitized solar cells.



Chem. Asian J.  
DOI: 10.1002/asia.201300185

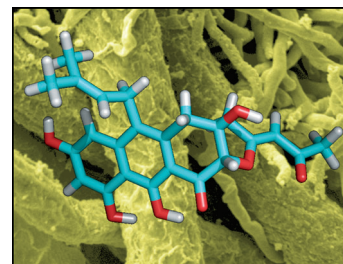


### Microbial Interactions

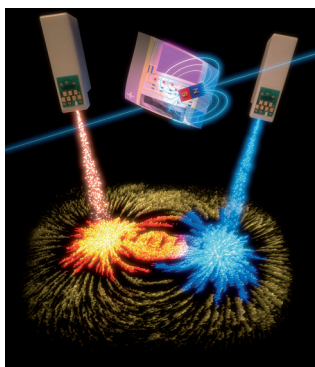
C. C. König, K. Scherlach, V. Schroeckh, F. Horn, S. Nietzsche, A. A. Brakhage,\* C. Hertweck\*

Bacterium Induces Cryptic Meroterpenoid Pathway in the Pathogenic Fungus *Aspergillus fumigatus*

**Stimulating encounter:** The intimate, physical interaction between the soil-derived bacterium *Streptomyces rapamycinicus* and the human pathogenic fungus *Aspergillus fumigatus* led to the activation of an otherwise silent polyketide synthase (PKS) gene cluster coding for an unusual prenylated polyphenol (fumicycline A). The meroterpenoid pathway is regulated by a pathway-specific activator gene as well as by epigenetic factors.



ChemBioChem  
DOI: 10.1002/cbic.201300070



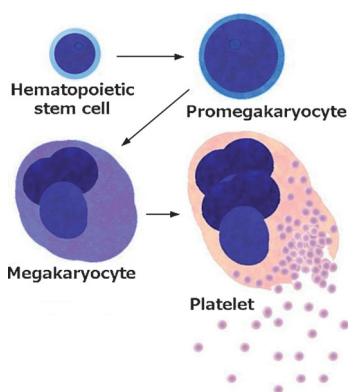
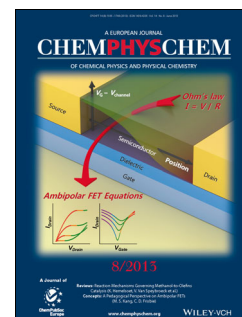
ChemPhysChem  
DOI: 10.1002/cphc.201300162

## Printed Electronics

D. Makarov,\* D. Karnaushenko, O. G. Schmidt

### Printable Magnetoelectronics

**Man the presses!** A large variety of electronic components assembled as printable optoelectronic devices and communication modules are already commercially available. However, an element that responds to a magnetic field has been realized only recently. Here, the printable magnetic sensor is positioned in a family of printable electronics and possible application directions of this technology are highlighted.



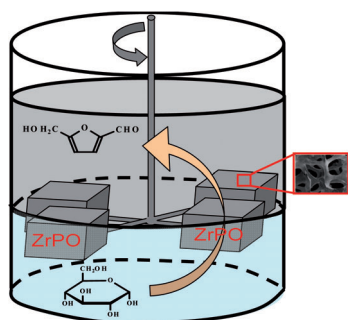
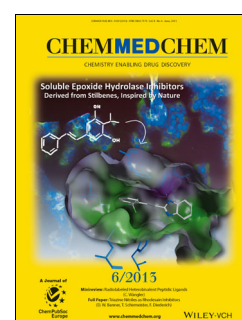
ChemMedChem  
DOI: 10.1002/cmdc.201300089

## Drug Discovery

A. Tarasova, D. N. Haylock, L. Meagher, C. L. Be, J. White, S. K. Nilsson, J. Andrade, K. Cartledge, D. A. Winkler\*

### Potent Agonists of a Hematopoietic Stem Cell Cytokine Receptor, c-Mpl

**Boosting TPO effects:** Through sequence analysis, mutation experiments, and computational studies, we developed a series of peptides with very high c-Mpl agonist activity and high efficacy relative to recombinant human thrombopoietin. One of our peptides potently stimulates megakaryocyte differentiation of primary hematopoietic stem cells in vitro. It is also highly active in vivo, resulting in an increase in megakaryocyte ploidy and platelet counts in mice.



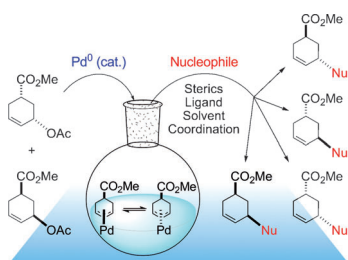
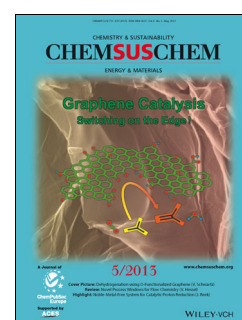
ChemSusChem  
DOI: 10.1002/cssc.201300017

## Renewables

V. V. Ordonsky, J. van der Schaaf, J. C. Schouten, T. A. Nijhuis\*

### Glucose Dehydration to 5-Hydroxymethylfurfural in a Biphasic System over Solid Acid Foams

**Cat-Al-ytically coated:** The preparation of a solid acid foam based on zirconium phosphate (ZrPO) coating on aluminum foam is described. The catalytic properties are evaluated in the dehydration of glucose to 5-hydroxymethylfurfural in a biphasic rotating foam reactor (see picture). The silylation procedure leads to a higher selectivity, and a more intensive contact of the foam with aqueous and organic phases leads to an increase of selectivity and stability.



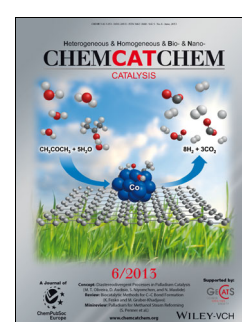
ChemCatChem  
DOI: 10.1002/cctc.201200644

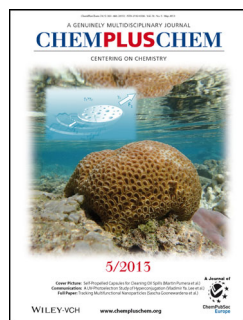
## CO Oxidation

M. T. Oliveira, D. Audisio, S. Niyomchon, N. Maulide\*

### Diastereodivergent Processes in Palladium-Catalyzed Allylic Alkylation

**Lost identity:** Pd-catalyzed asymmetric allylic alkylation allows the quantitative deracemization of chiral substrates. The reaction can be diastereodivergent if multiple diastereomers of the product are possible and if a specific process offers the ability to generate each of them. Herein, the advances made in this field are summarized and novel diastereodivergent deracemization and diastereodivergent de-epimerization concepts are introduced and discussed.



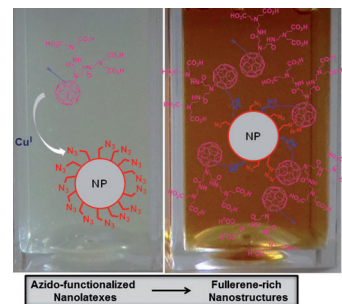


### Fullerodendrimers

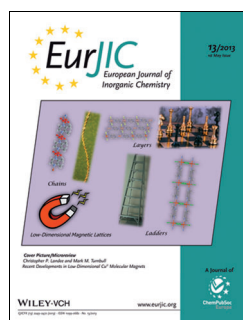
G. Rousseau, H. Fensterbank, K. Bacsko, M. Cano, I. Stenger, C. Larpent, E. Allard\*

Synthesis of Clickable Water-Soluble Poly(amidoamine) Fullerodendrimers and Their Use for Surface Functionalization of Azido-Coated Polymer Nanoparticles

**Taking sides:** The synthesis of clickable water-soluble fullerodendrimers that contain on one side a poly(amidoamine) dendron and on the other side an alkyne moiety is presented. This chemical handle is used to immobilize fullerodendrimers on azido-coated nanoparticles (NPs) by means of the copper(I)-catalyzed azide and alkyne cycloaddition reaction and leads to fullerene-rich nanostructures (see figure).



ChemPlusChem  
DOI: 10.1002/cplu.201300045

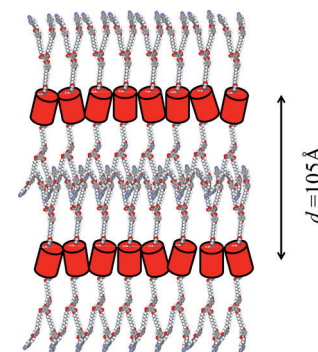


### Liquid Crystals

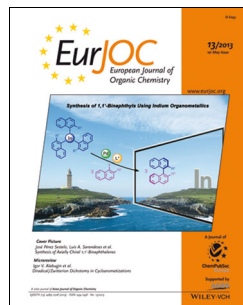
E. Terazzi,\* A. Zaïm, B. Bocquet, J. Varin, L. Guénée, T. Dutronc, J.-F. Lemonnier, S. Floquet, E. Cadot, B. Heinrich, B. Donnio, C. Piguet\*

Implementing Liquid-Crystalline Properties in Single-Stranded Dinuclear Lanthanide Helicates

The lipophilic dendritic ligand **L6** selectively reacts with trivalent yttrium hexafluoroacetylacetonate (hfac) to give the liquid-crystalline single-stranded dinuclear helicate  $[Y_2(L6)(hfac)_6]$ , which self-organises into an SmA mesophase.



Eur. J. Inorg. Chem.  
DOI: 10.1002/ejic.201300176

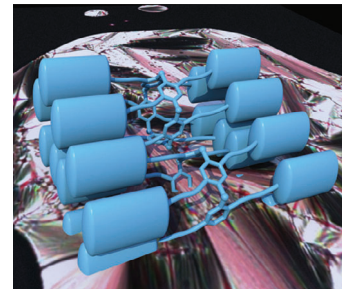


### Liquid Crystals

I. Nierengarten, S. Guerra, M. Holler, L. Karmazin-Brelot, J. Barberá,\* R. Deschenaux,\* J.-F. Nierengarten\*

Macrocyclic Effects in the Mesomorphic Properties of Liquid-Crystalline Pillar[5]- and Pillar[6]arenes

Pillar[n]arene ( $n = 5$  or  $6$ ) derivatives substituted with peripheral mesogenic moieties gave rise to an enantiotropic smectic A phase over a very broad temperature range, whereas only a monotropic mesophase was observed for the corresponding constitutive acyclic monomeric subunit.



Eur. J. Org. Chem.  
DOI: 10.1002/ejoc.201300356

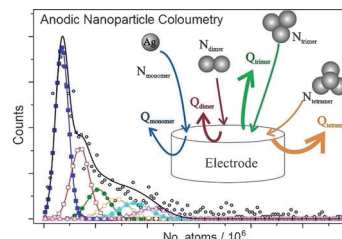


### Electrochemistry

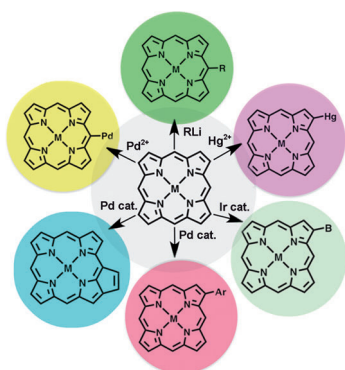
J. Ellison, K. Tschulik,\* E. J. E. Stuart, K. Jurkschat, D. Omanović, M. Uhlemann, A. Crossley, R. G. Compton\*

Get More Out of Your Data: A New Approach to Agglomeration and Aggregation Studies Using Nanoparticle Impact Experiments

**The impact of Ag nanoparticles:** A new approach to both sizing nanoparticles in solution and determining their agglomeration and aggregation state solely by electrochemical methods is presented. The data obtained by this method is critically compared to results of nanoparticle tracking analysis.



ChemistryOpen  
DOI: 10.1002/open.201300005



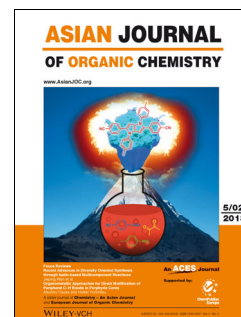
Asian J. Org. Chem.  
DOI: 10.1002/ajoc.201200183

### Porphyrin Modification

H. Yorimitsu,\* A. Osuka\*

Organometallic Approaches for Direct Modification of Peripheral C–H Bonds in Porphyrin Cores

**A bigger piece of the pi:** Recently developed organometallic chemistry is powerful and sophisticated enough to modify porphyrin C–H bonds directly, efficiently, and selectively. This Focus Review summarizes examples of direct metalations and C–C bond formation at peripheral porphyrin C–H bonds aiming at improving synthetic strategies for  $\pi$ -electron-rich organic materials.



ChemViews magazine  
DOI: 10.1002/chemv.201300063

### Competition

JungChemikerForum (JCF), ChemistryViews.org, Vereinigung für Chemie und Wirtschaft (VCW)

Picture Competition - A Year in the Lab: The Chemist's View

You are invited to submit a picture showing the beautiful and fascinating things you find in a chemistry lab. Your picture, for example, might show an experimental setup from an unusual angle, vividly illustrate concepts, or show the beauty of chemistry with outstanding pictures created with imaging technology. The best 12 pictures will receive an award and will appear in a calendar for 2014.

