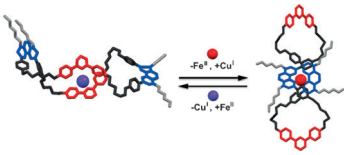
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.


## *Molecular Devices*

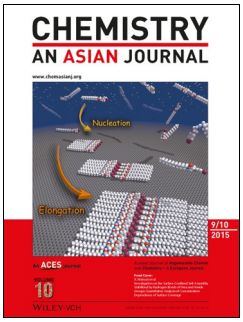
F. Niess, V. Duplan, C. S. Diercks, J.-P. Sauvage*

Contractile and Extensible Molecular Figures-of-Eight

**Forced to twist**: Two large rings, 66- and 78-membered, each one incorporating two pairs of transition-metal-complexing units, have been prepared. Both macrocycles form molecular figures-of-eight in the presence of iron(II) (see figure). The larger ring can accommodate a four-coordinate copper(I) center to form a highly twisted figure-of-eight backbone, whereas the smaller ring is too small for coordination.



*Chem. Eur. J.*
DOI: **10.1002/chem.201502216**

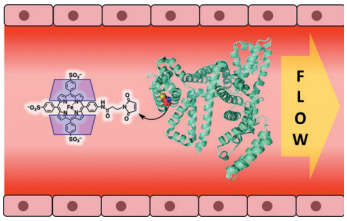



## *Bioconjugation*

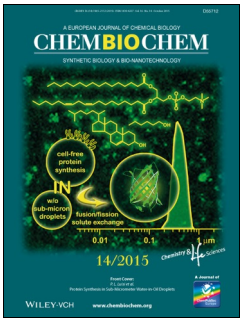
H. Kitagishi,* H. Kawasaki, K. Kano

Bioconjugation of Serum Albumin to a Maleimide-appended Porphyrin/Cyclodextrin Supramolecular Complex as an Artificial Oxygen Carrier in the Bloodstream

**Putting in circulation**: A synthetic $O_2$ carrier, hemoCD, was modified with a maleimide functional group to achieve a long time circulation in mammalian blood. The bioconjugation reaction with serum albumin proceeded not only in an aqueous solution (in vitro) but also during circulation in the bloodstream (in vivo).




*Chem. Asian J.*
DOI: **10.1002/asia.201500451**

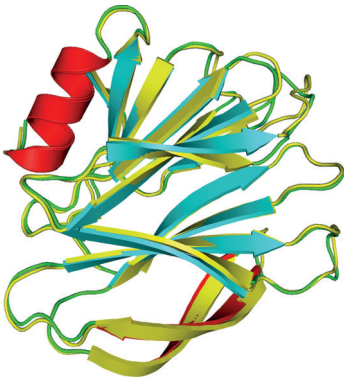



## *Carbohydrate Binding*

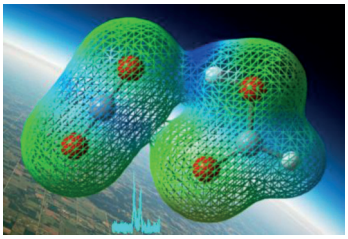
X. Yu,* R. Mishra, G. Holloway, M. von Itzstein, B. S. Coulson, H. Blanchard*

Substantial Receptor-induced Structural Rearrangement of Rotavirus VP8*: Potential Implications for Cross-Species Infection

**Rotavirus recognition**: The structural adaptability of rotavirus VP8* observed upon glycan receptor binding provides substantial insights into the rotavirus recognition of diverse cell-surface receptors. This is critical to better understanding the mechanisms that mediate rotavirus infection and cross-species transmission, and presents exciting opportunities for drug discovery.



*ChemBioChem*
DOI: **10.1002/cbic.201500360**



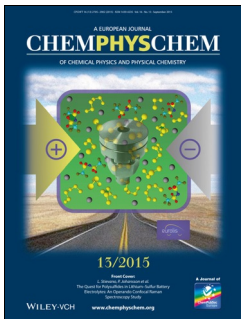
*ChemPhysChem*
DOI: **10.1002/cphc.201500531**

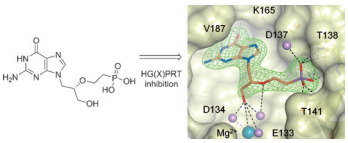
### *Microwave Spectroscopy*

A. Vigorito, Q. Gou, C. Calabrese, S. Melandri, A. Maris,* W. Caminati

How $CO_2$ Interacts with Carboxylic Acids: A Rotational Study of Formic Acid–$CO_2$

**Never let me go**: Formic acid clamps $CO_2$ through a dominating H···O hydrogen bond and a secondary C···O link, forming a planar and quite rigid molecular complex. The calculated binding energy is $D_0 = 13$ kJ mol$^{-1}$.



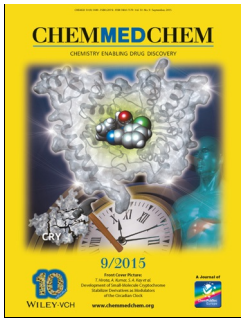

*ChemMedChem*
DOI: **10.1002/cmdc.201500322**

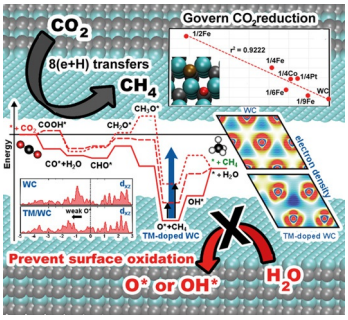
### *Antimalarial Agents*

M. M. Kaiser, D. Hocková, T.-H. Wang, M. Dračínský, L. Poštová-Slavětínská, E. Procházková, M. D. Edstein, M. Chavchich, D. T. Keough, L. W. Guddat,* Z. Janeba*

Synthesis and Evaluation of Novel Acyclic Nucleoside Phosphonates as Inhibitors of *Plasmodium falciparum* and Human 6-Oxopurine Phosphoribosyltransferases

**Combating malaria**: An efficient inhibition of plasmodial 6-oxopurine phosphoribosyltransferase, a key enzyme of the parasitic purine nucleotide salvage pathway, is a promising way to combat malaria. Novel acyclic nucleoside phosphonates were designed as potent inhibitors of phosphoribosyltransferases, and the mode of their binding in the enzyme active site was studied in detail.



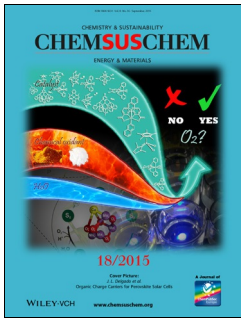

*ChemSusChem*
DOI: **10.1002/cssc.201500245**

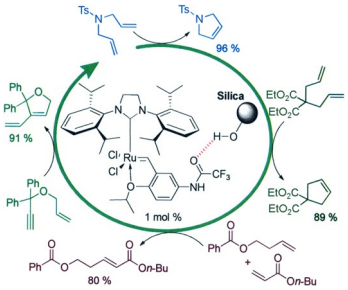
### *Carbon Dioxide Chemistry*

S. Wannakao, N. Artrith, J. Limtrakul, A. M. Kolpak*

Engineering Transition-Metal-Coated Tungsten Carbides for Efficient and Selective Electrochemical Reduction of $CO_2$ to Methane

**Finding the right direction**: The mechanism of $CO_2$ reduction to $CH_4$ on tungsten carbide (WC) and on WC surfaces doped with transition metal (TM) atoms was investigated. Directional bonding arising from the mixed covalent/metallic character plays a critical role in the surface chemistry. An extended d-band model that can explain both site-preference and binding-energy trends is proposed.




*ChemCatChem*
DOI: **10.1002/cctc.201500261**

### *Hydrogen Bonding*

H. Nasrallah, D. Dragoe, C. Magnier, C. Crévisy, M. Mauduit, E. Schulz*

Direct Immobilization of Ru-Based Catalysts on Silica: Hydrogen Bonds as Non-Covalent Interactions for Recycling in Metathesis Reactions

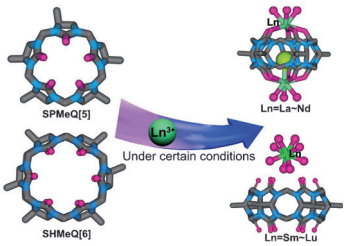
**Hydrogen bonding is key**: A ruthenium precatalyst ($M7_1$-SIPr) can be impregnated on silica by means of hydrogen bonding. The hydrogen bond interactions are proven to be responsible for catalytic activity enhancement in metathesis reactions. The silica-supported complex is easily recovered by simple filtration, and delivers the target products in high yield for seven consecutive runs in a multisubstrate procedure.


## Cucurbiturils

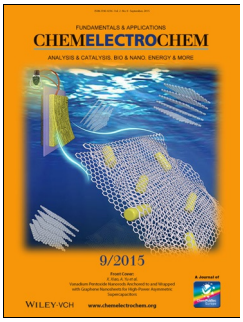
C.-Z. Wang, W.-X. Zhao, Y.-Q. Zhang, S.-F. Xue, Z. Tao, Q.-J. Zhu*

Interaction of $Ln^{3+}$ with Methyl-Substituted Cucurbit[*n*]urils ($n=5,6$) Derived from 3α-Methyl Glycoluril

**Be my guest**: The interactions between a series of lanthanide cations ($Ln^{3+}$) and methyl-substituted cucurbit[*n*]urils ($n=5,6$; SPMeQ[5] and SHMeQ[6]) derived from 3α-methyl glycoluril were investigated. Single-crystal X-ray diffraction analysis revealed that both selectively interact with certain Ln ions (see figure). The experimental results point to a possible means of isolating lighter or heavier Ln cations from their heavier or lighter counterparts.




*ChemPlusChem*
DOI: **10.1002/cplu.201500045**

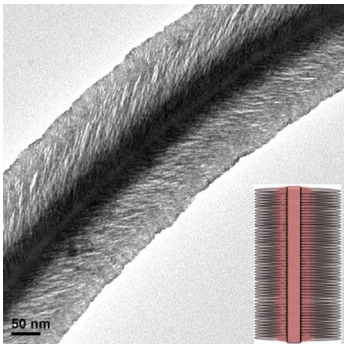



## Carbon Nanotubes

J. Liu,* A. Shen, X. Wei, S. Wang,* K. Zhou, J. Xu

Homogenous Core–Shell Nitrogen-Doped Carbon Nanotubes for the Oxygen Reduction Reaction

**Carbon to the core**: Homogenous core–shell nitrogen-doped carbon nanotubes are successfully prepared, and the unique structure of the common carbon nanotube (core) with standing graphite (shell) exhibits long-term operation stability and high tolerance to methanol-poisoning effects, which are comparable to those of commercial Pt/C electrocatalysts.



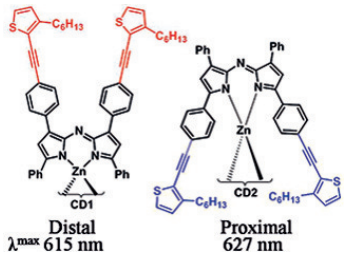

*ChemElectroChem*
DOI: **10.1002/celc.201500223**


## Near-Infrared Dyes

C. M. Daddario, Q. Han, M. Zeller, G. Sauvé*

Azadipyrromethene-Based Near-Infrared Dyes: Effect of Thienylethynyl Substitution at the Distal and Proximal Phenyl Groups

Azadipyrromethene ligands substituted with thienylethynyl substituents at the distal or proximal phenyl groups were synthesized and coordinated with $BF_2^+$ and $Zn^{II}$. Thienylethynyl substitutions redshift the absorption spectra of the dyes, with a larger shift for proximal substitution. Substitutions also stabilize the anions, and the placement of the thienylethynyl groups do not affect the reduction potentials.



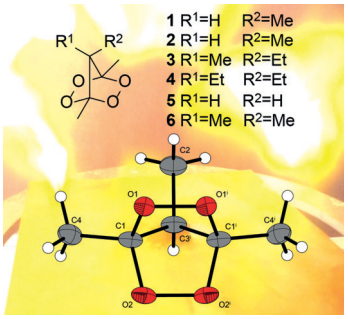

*Eur. J. Inorg. Chem.*
DOI: **10.1002/ejic.201500348**


## Energetic Materials Research

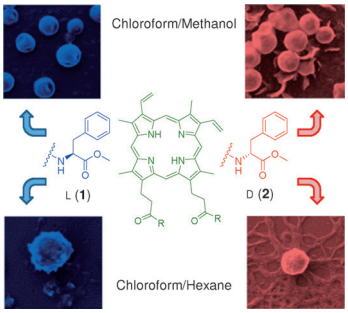
T. M. Klapötke,* B. Stiasny, J. Stierstorfer, C. H. Winter

Energetic Organic Peroxides – Synthesis and Characterization of 1,4-Dimethyl-2,3,5,6-tetraoxabicyclo[2.2.1]heptanes

Energetic organic peroxides – simple, strong and sensitive: This contribution reports on the synthesis of a series of tetraoxabicylclo heptanes which are easy accessible by $H_2O_2$ and alkyl-acetyl-acetones. All obtained compounds are highly energetic and sensitive toward mechanical stimuli such as impact and friction. The picture shows the moment of decomposition on a hot copper plate.




*Eur. J. Org. Chem.*
DOI: **10.1002/ejoc.201500919**



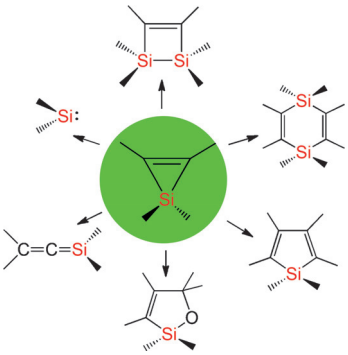

*ChemistryOpen*
DOI: **10.1002/open.201500011**

### *Nanostructures*

M. S. R. Bobe, M. Al Kobaisi, S. V. Bhosale,* S. V. Bhosale*

Solvent-Tuned Self-Assembled Nanostructures of Chiral L/D-Phenylalanine Derivatives of Protoporphyrin IX

**Porphyrin self-assembly**: We used L- and D-phenylalanine to modify protoporphyrin IX into methyl L/D-phenylalanine diamideprotoporphyrin IX (**1** and **2**). Solvophobic-controlled self-assembly of these chiral peptide—porphyrin derivatives led to the formation of nanostructures of various morphologies: spheres, nanofibers, lamellar structures, and thread-like and spherical shells.

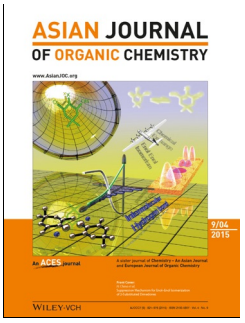

*Asian J. Org. Chem.*
DOI: **10.1002/ajoc.201500271**

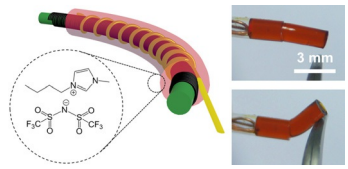
### *Silacyclopropene Chemistry*

M. Ishikawa,* A. Naka, J. Ohshita*

The Chemistry of Silacyclopropenes

**Si-gn of the times**: The synthesis and reactions of silacyclopropenes are summarized. Many types of silacyclopropenes have been synthesized to date by addition of silenes to alkynes, photochemical isomerization of alkynyldisilanes, and so on. Due to the high ring strain, they exhibit interesting reactivity, leading to the formation of silicon-containing reactive intermediates and cyclic and acyclic organosilicon compounds that are difficult to obtain by other routes.



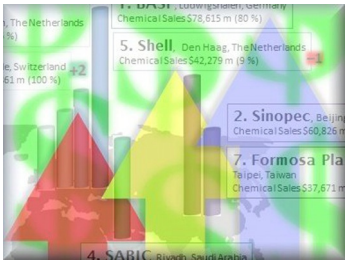

*ChemNanoMat*
DOI: **10.1002/cnma.201500093**

### *Dye-Sensitized Solar Cells*

H. Li, J. Guo, H. Sun, X. Fang, D. Wang, H. Peng*

Stable Hydrophobic Ionic Liquid Gel Electrolyte for Stretchable Fiber-Shaped Dye-Sensitized Solar Cell

**A stable semi-solid electrolyte** based on polymer–ionic liquid gel with high nonvolatility and durability is developed for stretchable fiber-shaped dye-sensitized solar cells. This gel electrolyte maintains a semi-solid state up to 98 °C and sustains a high temperature up to 300 °C. The fiber-shaped dye-sensitized solar cell shows a high and stable power conversion efficiency.


*ChemViews magazine*
DOI: **10.1002/chemv.201500079**

### *Industry Roundup*

ChemViews Magazine

Top Ten Chemical Companies in 2014

Worldwide, chemical companies saw a slight decrease in revenues last year. The top 50 companies showed combined revenues of USD 961.3 billion, compared to USD 965.1 billion in 2013. *ChemViews Magazine* gives a graphical overview of the top ten chemical companies and global chemical sales in 2014.