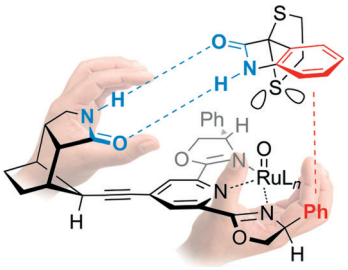
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Asymmetric Catalysis

F. Zhong, A. Pöthig, T. Bach*

Synergistic Stereocontrol in the Enantioselective Ruthenium-Catalyzed Sulfoxidation of Spirodithiolane-Indolones

Hand-in-hand: Two spatially remote chiral entities act synergistically together in the Ru-catalyzed sulfoxidation reaction of the title compounds. Hydrogen bonds and π–π interactions are invoked to explain the preferential formation of a single stereoisomer in this reaction. High enantioselectivities (90–99% *ee*) were achieved unless one of the two non-covalent binding events was disturbed.



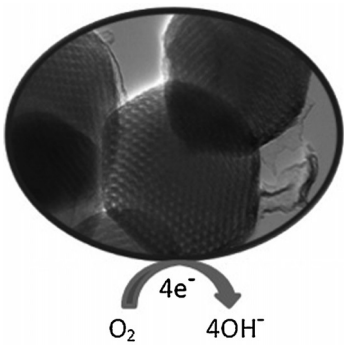
Chem. Eur. J.
DOI: **10.1002/chem.201501780**

Mesoporous Materials

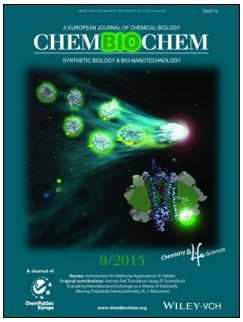
B. Bayatsarmadi, Y. Zheng, M. Jaroniec, S. Z. Qiao*

Soft-Templating Synthesis of *N*-Doped Mesoporous Carbon Nanospheres for Enhanced Oxygen Reduction Reaction

ORR what else could it be? Nitrogen-doped mesoporous carbon spheres with a high surface area, large pore volume, high nitrogen content, and high conductivity have been synthesized via a simple soft-templating method, which facilitates oxygen reduction reaction through a one-step ($4e^-$) pathway with a high ORR kinetic current and positive onset potential.



Chem. Asian J.
DOI: **10.1002/asia.201500287**

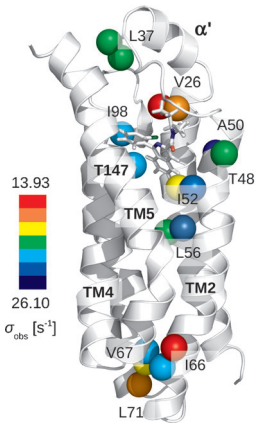


Membrane Proteins

M. Jaremko, Ł. Jaremko, K. Giller, S. Becker, M. Zweckstetter*

Structural Integrity of the A147T Polymorph of Mammalian TSPO

Ligands of the transmembrane protein TSPO are used for imaging of brain inflammation, but a common polymorphism in TSPO complicates their application to humans. NMR spectroscopy determined the three-dimensional structure and side-chain dynamics of the A147T polymorph of mammalian TSPO in complex with the first-generation ligand PK11195.



ChemBioChem
DOI: **10.1002/cbic.201500217**

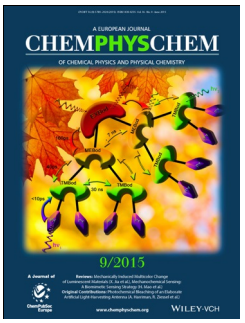
ChemPhysChem
DOI: **10.1002/cphc.201500150**

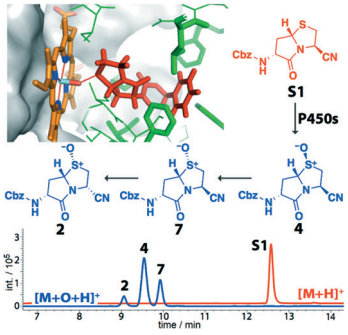
Photochemistry

M. A. H. Alamiry, A. Harriman,* A. Haefele, R. Ziessel*

Photochemical Bleaching of an Elaborate Artificial Light-Harvesting Antenna

Like autumn leaves: The putative artificial light-harvesting antenna slowly changes colour during exposure to simulated sunlight.





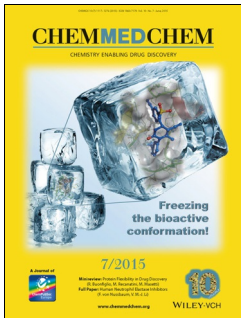
ChemMedChem
DOI: **10.1002/cmdc.201500114**

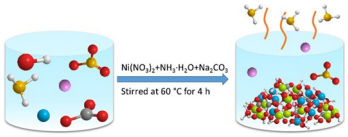
Drug Metabolism

P. Schiavini, J. Pottel, N. Moitessier,* K. Auclair*

Metabolic Instability of Cyanothiazolidine-Based Prolyl Oligopeptidase Inhibitors: a Structural Assignment Challenge and Potential Medicinal Chemistry Implications

Solving a complex puzzle: This study revealed that a mixture of rapidly equilibrating diastereomers is formed after sulfur oxidation of cyanothiazolidine-based compounds by P450 enzymes. Therefore, in terms of drug development, cyanothiazolidine moieties are best avoided, given their rapid P450-mediated oxidation and the unpredictable stability of the corresponding metabolites.





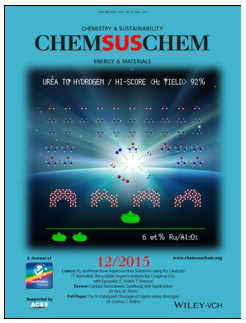
ChemSusChem
DOI: **10.1002/cssc.201500182**

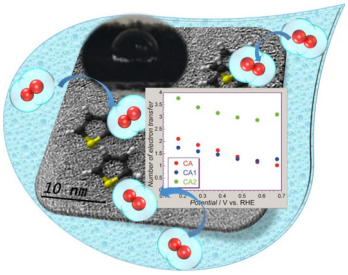
Water Oxidation

Y. Yang, F. Liang, M. Li, T. E. Rufford, W. Zhou,* Z. Zhu*

Low-Temperature Synthesis of Hierarchical Amorphous Basic Nickel Carbonate Particles for Water Oxidation Catalysis

..., that's amor-phous: Hierarchical basic nickel carbonate particles are prepared at temperatures as low as 60 °C, using an evaporation-induced precipitation process. The products exhibited outstanding catalytic activities in the oxygen evolution reaction (OER), as compared to precious-metal-oxide catalysts such as RuO_2 and IrO_2. These results suggest the potential application of easily prepared hierarchical basic nickel carbonate particles as cheap and robust OER catalysts with high activity.





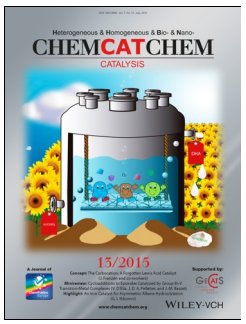
ChemCatChem
DOI: **10.1002/cctc.201500192**

Oxygen Reduction

M. Seredych, K. László, T. J. Bandosz*

Sulfur-Doped Carbon Aerogel as a Metal-Free Oxygen Reduction Catalyst

Pores for thought: The thermal treatment of a carbon aerogel with H_2S results in the introduction of thiophenic compounds to the carbon matrix, which increased the efficiency of the oxygen reduction reaction. As a result of their hydrophobicity, the aerogels withdraw O_2 from the electrolyte. The specific micro-/mesoporosity enhances the accessibility of the surface sites to oxygen dissolved in water.

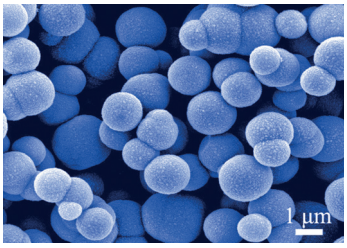


Photocatalysis

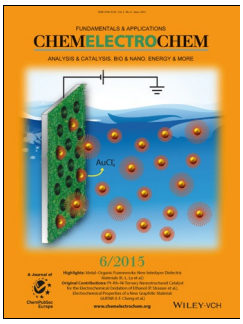
L. Chen,* Y. Yu, M. Wu, J. Huang, Y. Liu, X. Liu,* G. Qiu

Synthesis of Hollow $BiVO_4$/Ag Composite Microspheres and Their Photocatalytic and Surface-Enhanced Raman Scattering Properties

Hydrothermal synthesis: Hollow $BiVO_4$/Ag microspheres are synthesized through a simple hydrothermal method. The obtained $BiVO_4$/Ag microspheres exhibit a remarkable photocatalytic activity and SERS performance.



ChemPlusChem
DOI: **10.1002/cplu.201402434**

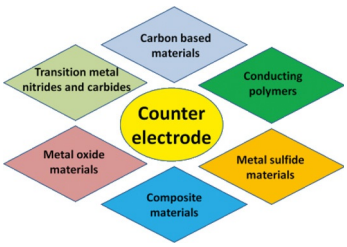


Electrode Materials

J. Theerthagiri, A. R. Senthil, J. Madhavan,* T. Maiyalagan

Recent Progress in Non-Platinum Counter Electrode Materials for Dye-Sensitized Solar Cells

Getting a little sun: Recent progress in the replacement of the platinum counter electrode with other cheaper materials for dye-sensitized solar cells (DSSCs) is presented. Platinum-free counter electrode materials are categorized into carbon materials, conducting polymers, inorganic metal oxides and metal sulfides, transition-metal nitrides and carbides, and composite materials, and the advantages of these platinum-free catalysts for DSSCs are highlighted.



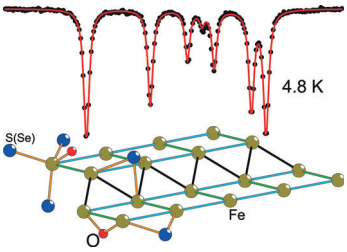
ChemElectroChem
DOI: **10.1002/celc.201402406**

Frustrated Spin Ladders

S. Huh, Y. Prots, P. Adler, L. H. Tjeng, M. Valldor*

Synthesis and Characterization of Frustrated Spin Ladders $SrFe_2S_2O$ and $SrFe_2Se_2O$

$SrFe_2Ch_2O$ (Ch = S, Se) contain ladder lattices of high-spin Fe^{2+} (d^6) ions that exhibit strong magnetic coupling. Geometrical frustration prevents long-range spin order above $T_N = 216$ (Ch = S) and 228 K (Ch = Se). The Mössbauer spectroscopy data require a more complex description because of the special local Fe coordination: a tetrahedron of one oxygen ion and three heavier chalcogenide ions.



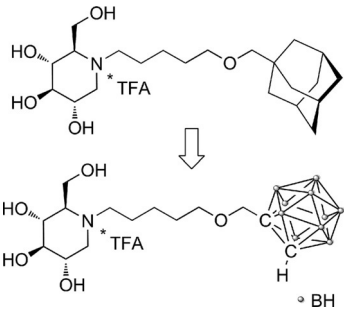
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201500385**

Glycosidase Inhibitors

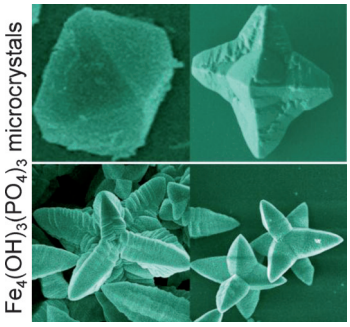
S. Hoogendoorn, E. D. Mock, A. Strijland, W. E. Donker-Koopman, H. van den Elst, R. J. B. H. N. van den Berg, J. M. F. G. Aerts, G. A. van der Marel, H. S. Overkleeft*

ortho-Carborane-Modified *N*-Substituted Deoxynojirimycins

The synthesis of a series of *ortho*-carborane-containing deoxynojirimycin (DNM) derivatives is described. The resulting compounds are potent inhibitors of human glucosylceramidases and glucosylceramide synthase, with inhibitory profiles comparable to those of the corresponding adamantyl-DNM derivatives.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201500364**



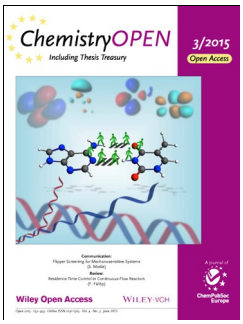
ChemistryOpen
DOI: **10.1002/open.201402112**

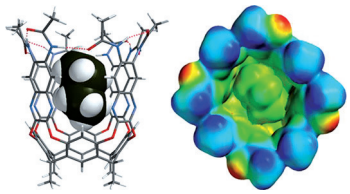
Nanomaterials

J. Zhao, Y. Zhang, Z. Run, P. Li, Q. Guo, H. Pang*

Ferric Phosphate Hydroxide Microstructures Affect Their Magnetic Properties

Size and shape matter! Precise control of the morphology of functional mirco/nanomaterials could allow for the control of their performance. $Fe_4(OH)_3(PO_4)_3$ microcrystals of different morphologies were successfully prepared under hydrothermal conditions by changing the reaction time, temperature, or amount of hexadecyltrimethylammonium bromide (CTAB). More importantly, their magnetic properties were affected by their size and shape.





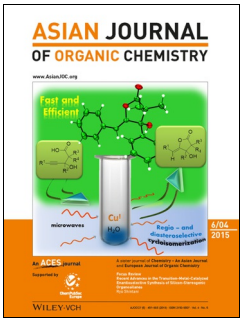
Asian J. Org. Chem.
DOI: **10.1002/ajoc.201500201**

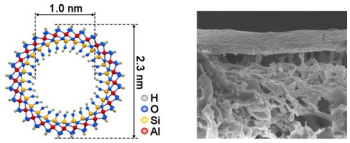
Cavitands

Q.-T. Nguyen, D.-W. Oh, W. Kim, S. K. Sahoo, H.-J. Choi*

Self-Folding Deep Cavitand with Acetamidoquinoxaline Flaps: Hindered Ring Inversion of Cyclohexane in a Confined Cavity by CH–π Interaction

Chair of the session: A cavitand with acetamidoquinoxaline flaps self-folds to form a deep confined cavity rigidified by intramolecular hydrogen bonding. The chair-to-chair interconversion of encapsulated cyclohexane was significantly hindered compared with free cyclohexane.





ChemNanoMat
DOI: **10.1002/cnma.201500012**

Membranes

D.-Y. Kang,* M. E. Lydon, G. I. Yucelen, C. W. Jones, S. Nair*

Solution-Processed Ultrathin Aluminosilicate Nanotube–Poly(vinyl alcohol) Composite Membranes with Partial Alignment of Nanotubes

Stand and deliver! Single-walled aluminosilicate nanotubes are solution-processed with poly(vinyl alcohol) (PVA) into polypropylene-supported ultrathin composite membranes that reveal partial vertical alignment of the nanotubes (see figure). Permeation of gas molecule probes (CO_2 and CH_4) shows a high-quality, defect-free membrane with much higher permeance than that of PVA and no loss of CO_2 selectivity.

ChemViews magazine
DOI: **10.1002/chemv.201500034**

Education

M. Riesmeier

Science Competitions: Gains Beyond Subject Matter

Science competitions, such as the International Chemistry Olympiad, are a fun way for students to get to know themselves a little better through exploring their talents and interests. Marabel Riesmeier tells the story of how participating in such competitions informed her decision to study chemistry.