Spotlights ...

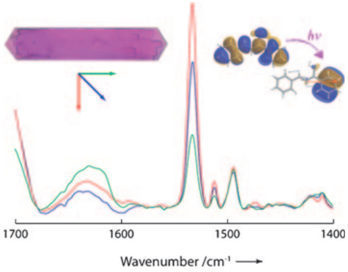
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Heterogeneous Catalysis

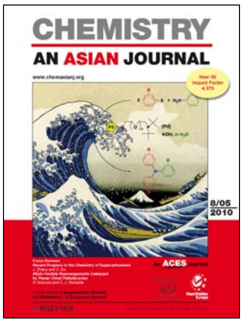
E. Stavitski, E. A. Pidko, M. H. F. Kox, E. J. M. Hensen, R. A. van Santen, B. M. Weckhuysen*

Detection of Carbocationic Species in Zeolites: Large Crystals Pave the Way

Molecules, line up! Synchrotron-based IR and UV/Vis microspectroscopic data and complementary theoretical calculations can be used to unambiguously identify transient carbocationic species generated in the acid-catalyzed oligomerization of styrene derivatives within ZSM-5. Polarization dependence of the IR and UV/Vis spectra is rationalized in terms of the vibrational and electronic transitions occurring in the confined molecules (see figure).



Chem. Eur. J.
DOI: **10.1002/chem.201000995**

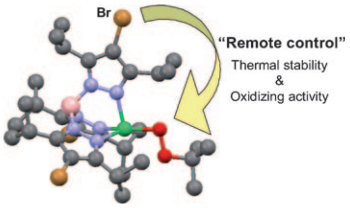


Oxidants

S. Hikichi,* C. Kobayashi, M. Yoshizawa, M. Akita

Tuning the Stability and Reactivity of Metal-bound Alkylperoxide by Remote Site Substitution of the Ligand

Gaining control: Thermal stability and oxidizing reactivity of nickel(II)–alkylperoxo species can be controlled by tuning the electronic property of the ligand without changing the coordination structure. Thermal stability of the brominated ligand complex is higher than that of the prototype non-brominated ligand complex.



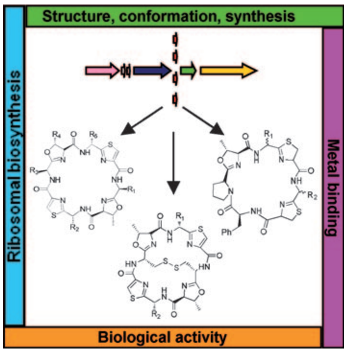
Chem. Asian J.
DOI: **10.1002/asia.201000183**

Cyclic Peptides

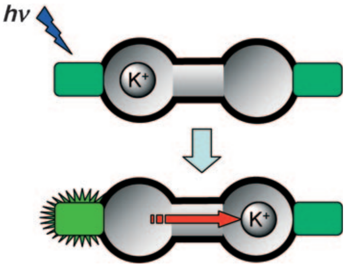
W. E. Houssen, M. Jaspars*

Azole-Based Cyclic Peptides from the Sea Squirt *Lissoclinum Patella*: Old Scaffolds, New Avenues

A combinatorial library encoded on a single gene: Azole-based cyclic peptides identified from the marine ascidian *Lissoclinum patella* are produced by its cyanobacterial symbiont *Prochloron* sp. through a ribosomal pathway. Variants of a single gene within the biosynthetic cluster led to different products.



ChemBioChem
DOI: **10.1002/cbic.201000230**



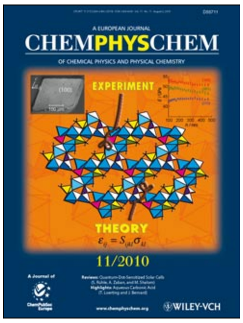
Molecular Shuttle

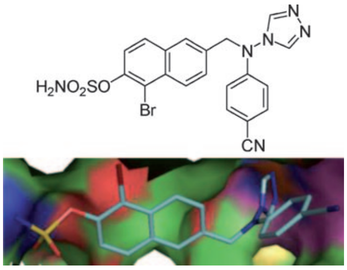
B. Valeur,* I. Leray, L. Zhao, V. Souchon, R. Métivier, P. Plaza,* C. Ley, F. Lacombat, M. M. Martin*

Photoinduced Cation Translocation in a Calix[4]biscrown: Towards a New Type of Light-Driven Molecular Shuttle

Femtosecond transient absorption experiments provide compelling evidence for the phototranslocation of a potassium ion through the tube-shaped cavity of a calix[4]biscrown from one site to the other, in the picosecond timescale, which opens the way to new strategies for very fast light-driven molecular shuttles (see figure).

ChemPhysChem
DOI: **10.1002/cphc.201000118**





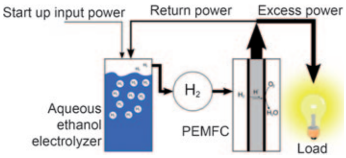
Antitumor Agents

P. M. Wood, L. W. L. Woo, J.-R. Labrosse, M. P. Thomas, M. F. Mahon, S. K. Chander, A. Purohit, M. J. Reed, B. V. L. Potter*

Bicyclic Derivatives of the Potent Dual Aromatase–Steroid Sulfatase Inhibitor 2-Bromo-4-{[(4-cyanophenyl)(4*H*-1,2,4-triazol-4-yl)-amino]methyl}phenylsulfamate: Synthesis, SAR, Crystal Structure, and in vitro and in vivo Activities

Dual aromatase–steroid sulfatase inhibitors: Compounds containing pharmacophores for both aromatase and steroid sulfatase inhibition were prepared and tested for dual inhibitory activities in JEG-3 cells. Potent dual-inhibitory activity in vitro was demonstrated and, for one compound, potent in vivo oral activity was observed with >90% inhibition of both enzymes 3 h after administration.

ChemMedChem
DOI: **10.1002/cmdc.201000203**



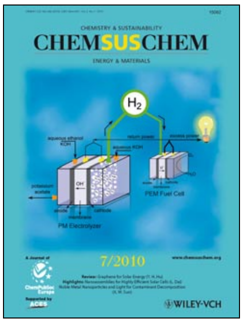
Hydrogen Generation

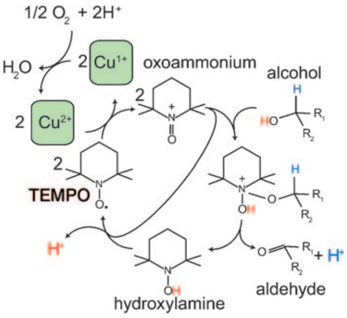
V. Bambagioni, M. Bevilacqua, C. Bianchini,* J. Filippi, A. Lavacchi, A. Marchionni, F. Vizza,* P. K. Shen*

Self-Sustainable Production of Hydrogen, Chemicals, and Energy from Renewable Alcohols by Electrocatalysis

Ultrapure hydrogen is produced in an alkaline polymeric membrane electrolyzer through selectively oxidation of a renewable alcohol to the corresponding carboxylate at the anode. The low amount of energy required for this reaction, about one-third the energy required by a traditional water electrolyzer, allows the electrolyzer to be self-sustainable when combined with a hydrogen fuel cell.

ChemSusChem
DOI: **10.1002/cssc.201000103**





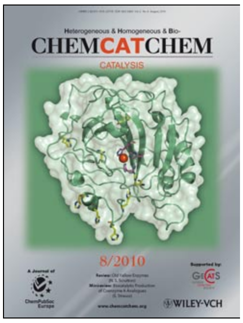
Chemoenzymatic Synthesis

S. A. Tromp, I. Matijošytė, R. A. Sheldon, I. W. C. E. Arends, G. Mul, M. T. Kreutzer, J. A. Moulijn, S. de Vries*

Mechanism of Laccase–TEMPO-Catalyzed Oxidation of Benzyl Alcohol

A change of TEMPO: The mechanism of benzyl alcohol conversion to benzaldehyde in air catalyzed by the organocatalyst 2,2,6,6-tetramethylpiperidinyl-1-oxyl (TEMPO) and the enzyme laccase is elucidated. In the organocatalytic cycle, TEMPO is regenerated through noncatalyzed comproportionation of the oxoammonium cation with hydroxylamine. Based on this mechanism, a kinetic model has been developed and validated.

ChemCatChem
DOI: **10.1002/cctc.201000068**

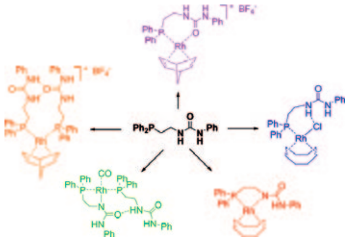


Ligand Design

J. Meeuwissen, R. Detz, A. J. Sandee, B. de Bruin, M. A. Siegler, A. L. Spek, J. N. H. Reek*

Ureaphosphanes as Hybrid, Anionic or Supramolecular Bidentate Ligands for Asymmetric Hydrogenation Reactions

We present ureaphosphane ligands that, depending on the nature of the anion and the metal/ligand ratio, coordinate as either hybrid, anionic or supramolecular bidentate ligands to rhodium. The different complexes were investigated in the asymmetric hydrogenation reaction.



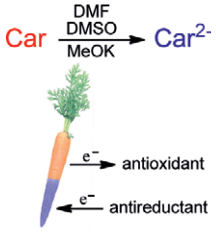
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201000213**

Antireductants

C. L. Øpstad, H.-R. Sliwka,* V. Partali

Facile Electron Uptake by Carotenoids Under Mild, Non-Radiative Conditions: Formation of Carotenoid Anions

Carotenoids (Car) may just as well be antireductants as they are antioxidants. Exceptional antireductant properties of carotenoids have been predicted by DF calculations. Indeed, dioxocarotenoids in alkaline DMSO or DMF easily take up electrons under ambient conditions and form stable, blue carotenoid dianions.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201000481**