

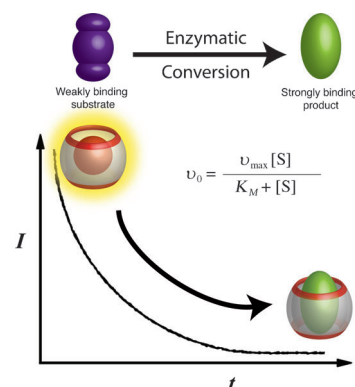


## Enzyme Assays

R. N. Dsouza, A. Hennig,\* W. M. Nau\*

### Supramolecular Tandem Enzyme Assays

**The combination of macrocycles** with fluorescent dyes affords supramolecular reporter pairs, which can be employed for the monitoring of catalytic, particularly biocatalytic, reactions. The resulting assays are unselective time-resolved variants of indicator displacement and uptake sensing systems. They are applicable to a large range of analytes and allow direct real-time monitoring in homogeneous solution, with the possibility of performing inhibitor and catalyst screening.



Chem. Eur. J.

DOI: 10.1002/chem.201103364

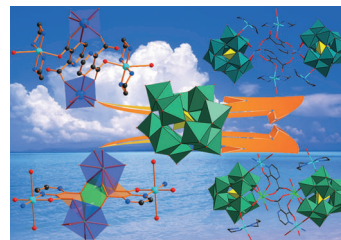


## Polyoxometalates

S. Zhang, J. Zhao, P. Ma, J. Niu,\* J. Wang\*

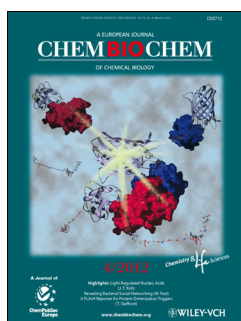
### Rare-Earth–Transition-Metal Organic–Inorganic Hybrids Based on Keggin-type Polyoxometalates and Pyrazine-2,3-dicarboxylate

**A rare find:** Two types of organic–inorganic hybrid monovacant Keggin silicotungstates with both rare-earth–transition-metal heterometals and mixed ligands ( $H_2pzda$  and ethylenediamine;  $pzda$  = pyrazine-2,3-dicarboxylate) were separated and characterized.



Chem. Asian J.

DOI: 10.1002/asia.201100918

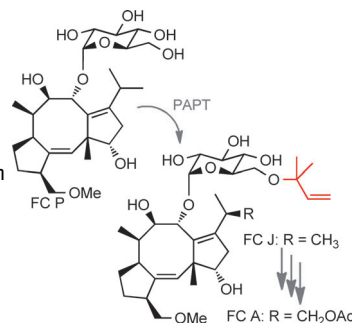


## Fungi

M. Noike,\* C. Liu, Y. Ono, Y. Hamano, T. Toyomasu, T. Sassa, N. Kato, T. Dairi\*

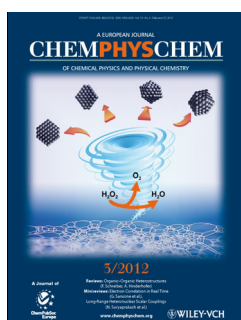
### An Enzyme Catalyzing O-Prenylation of the Glucose Moiety of Fusicoccin Diterpene Glucoside Produced by the Fungus *Phomopsis amygdali*

**A novel sugar prenyltransferase**, PAPT, from the fungus *Phomopsis amygdali* has been cloned and characterized. This enzyme transfers dimethylallyl diphosphate to the 6'-hydroxy group of the glucose moiety of fusicoccin (FC) A, a diterpene glucoside. To the best of our knowledge, this is the first enzyme to catalyze prenylation of a hydroxyl group in a glucose moiety.



ChemBioChem

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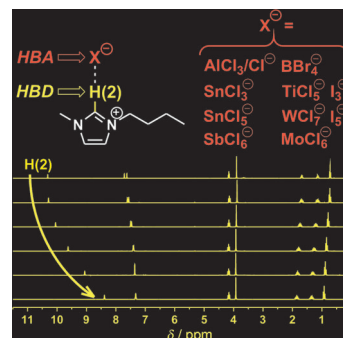


## Ionic Liquids

R. Lungwitz, S. Spange\*

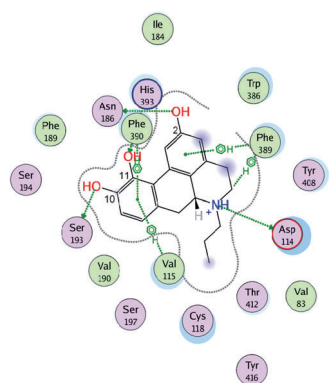
### Determination of Hydrogen-Bond-Accepting and -Donating Abilities of Ionic Liquids with Halogeno Complex Anions by Means of $^1H$ NMR Spectroscopy

**Two for the price of one:** The imidazolium cation serves both as part of the ionic liquid (IL) and as an NMR probe. Hydrogen-bond-accepting (HBA) and donating (HBD) abilities of ILs with halogeno complex anions ( $X^-$ ) are determined by means of  $^1H$  NMR spectroscopy (see picture). The chemical shift of the H(2) atom is a function of the HBA strength of the anion.



ChemPhysChem

DOI: 10.1002/cphc.201100832



ChemMedChem

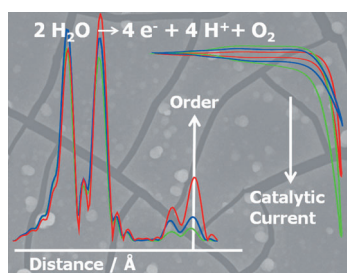
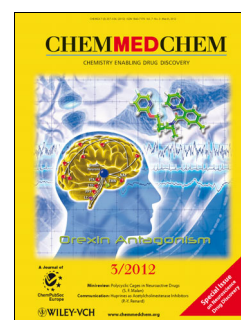
DOI: 10.1002/cmdc.201100545

## Molecular Modeling

M. Malo, L. Brive, K. Luthman, P. Svensson\*

Investigation of D<sub>2</sub> Receptor–Agonist Interactions Using a Combination of Pharmacophore and Receptor Homology Modeling

**The magic key** for dopamine D<sub>2</sub> receptor agonism was studied by using a combined receptor and pharmacophore modeling approach. All available experimental data, including a set of carefully selected active and inactive ligands, were used to identify the reasons behind selectivity and to pinpoint the specific ligand–receptor interactions made by D<sub>2</sub> agonists.



ChemSusChem

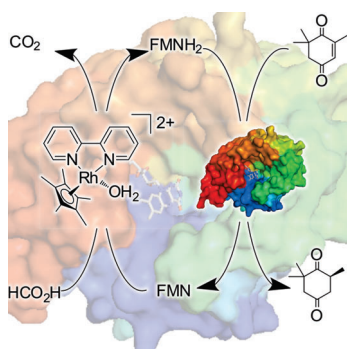
DOI: 10.1002/cssc.201100574

## Water Oxidation

M. Risch, K. Klingan, F. Ringleb, P. Chernev, I. Zaharieva, A. Fischer, H. Dau\*

Water Oxidation by Electrodeposited Cobalt Oxides—Role of Anions and Redox-Inert Cations in Structure and Function of the Amorphous Catalyst

**Cobalt crowds crack it up:** The catalytic activity of a cobalt-oxido film for water oxidation may be inversely proportional to atomic order, determined by the size of contiguous Co<sub>x</sub>O<sub>y</sub> clusters in the amorphous material. The redox-inert cations and anions in CoCat modulate redox properties and catalytic activity without modifying the basic structural motif of Co-oxido clusters.



ChemCatChem

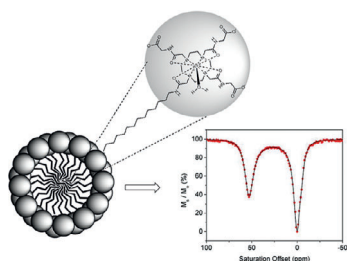
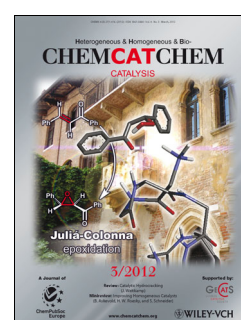
DOI: 10.1002/cctc.201100312

## Chemoenzymatic Reduction

J. Bernard, E. van Heerden, I. W. C. E. Arends, D. J. Opperman,\* F. Hollmann\*

Chemoenzymatic Reduction of Conjugated C=C Double Bonds

**An addiction to rhodium:** A nicotinamide-independent regeneration approach for enoate reductases is proposed. The transition metal complex [Cp\*Rh(bpy)(H<sub>2</sub>O)]<sup>2+</sup> can replace both the nicotinamide cofactor and a corresponding enzymatic regeneration system, which results in a simplified reaction system. This system is characterized and applied to the chemoenzymatic reduction of various conjugated C=C double bonds.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.201101369

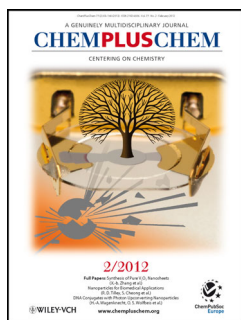
## Amphiphilic PARACEST Agents

O. M. Evbuomwan, G. Kiefer, A. D. Sherry\*

Amphiphilic EuDOTA-Tetraamide Complexes Form Micelles with Enhanced CEST Sensitivity

Four new EuDOTA-tetraamides with variable alkyl chains lengths were synthesized and their CEST properties were extensively studied. Three of these complexes were found to spontaneously form micelles due to their long alkyl chains which resulted in a dramatic increase in their CEST sensitivities.



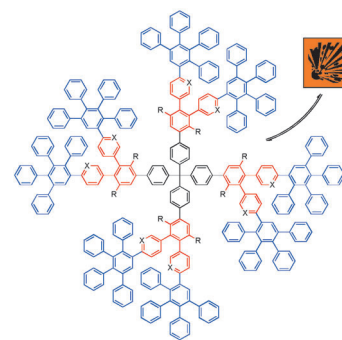


### Explosives Detection

D. Lubczyk, M. Grill, M. Baumgarten, S. R. Waldvogel,\* K. Müllen\*

Scaffold-Optimized Dendrimers for the Detection of the Triacetone Triperoxide Explosive Using Quartz Crystal Microbalances

**Affinity and selectivity:** The online detection of the explosive triacetone triperoxide (TATP) is an utmost challenge in security research. The great number of events wherein TATP was involved underlines the significance of solutions to trace that particular explosive material. New optimized functionalized polyphenylene dendrimers (see structure) have been synthesized that can be used as powerful affinity systems to trace TATP on a ppb level.



ChemPlusChem  
DOI: 10.1002/cplu.201100080

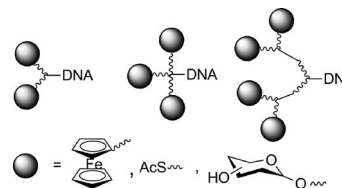


### Oligonucleotides

C. Ligeour, A. Meyer, J.-J. Vasseur, F. Morvan\*

Bis- and Tris-Alkyne Phosphoramidites for Multiple 5'-Labeling of Oligonucleotides by Click Chemistry

Oligonucleotide conjugates exhibiting two or three thio-linkers, ferrocene moieties, or up to four carbohydrate residues were synthesized by poly click chemistry by using new bis- or tris-alkyne phosphoramidites



Eur. J. Org. Chem.  
DOI: 10.1002/ejoc.201101763



### Biofuel Production

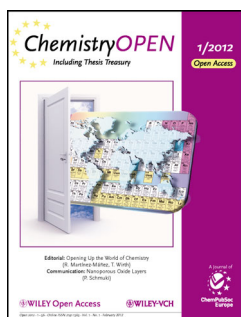
Rainer Zah and Simon Gmünder

Biofuels from Developing Regions

Biofuels from tropical regions have a bad reputation because of the negative effects associated with changing land use. Rainer Zah and Simon Gmünder, Life Cycle Assessment & Modeling, EMPA, Switzerland, show that niches for the sustainable production and use of bio-fuels exist, especially in developing countries.



ChemViews magazine  
DOI: 10.1002/chemv.201200012

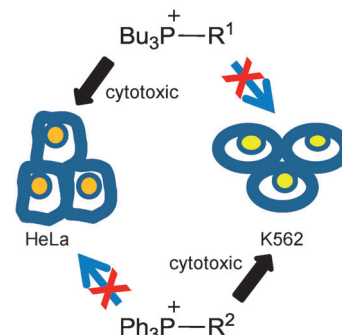


### Bioactive Salts

B. Bachowska, J. Kazmierczak-Baranska, M. Cieslak, B. Nawrot, D. Szczesna, J. Skalik, P. Bałczewski\*

High Cytotoxic Activity of Phosphonium Salts and Their Complementary Selectivity towards HeLa and K562 Cancer Cells: Identification of Tri-*n*-butyl-*n*-hexadecylphosphonium bromide as a Highly Potent Anti-HeLa Phosphonium Salt

**Complementary toxicity:** Phosphonium salts with halogen anions are several times more cytotoxic against HeLa and K562 cancer cells than the clinically used reference compound cisplatin and show unusual complementary anticancer selectivity, which has not previously been reported in the literature.



ChemistryOpen  
DOI: 10.1002/open.201100003