

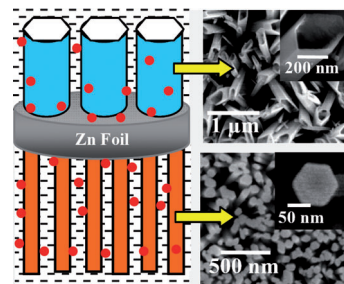


Nanostructures

H. Zhang, Y. Li, P. Liu, Y. Li, D. Yang, H. Yang, H. Zhao*

A New Vapor-Phase Hydrothermal Method to Concurrently Grow ZnO Nanotube and Nanorod Array Films on Different Sides of a Zinc Foil Substrate

Vertically aligned ZnO single-crystal nanotube/nanorod array films have been concurrently fabricated, respectively, on the top and bottom surfaces of a zinc foil substrate by a facile vapor-phase hydrothermal method, due to the unique vapor-phase reaction environment (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201200036

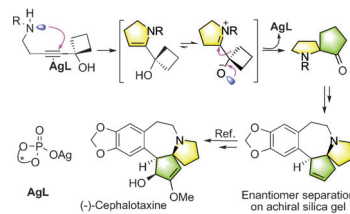


Natural Products

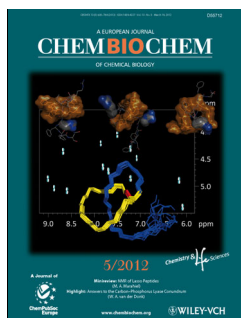
Q.-W. Zhang, K. Xiang, Y.-Q. Tu,* S.-Y. Zhang, X.-M. Zhang, Y.-M. Zhao, T.-C. Zhang

Formal Synthesis of (–)-Cephalotaxine Based on a Tandem Hydroamination/Semipinacol Rearrangement Reaction

Catalytic asymmetric formal synthesis of (–)-cephalotaxine has been accomplished based on an efficient tandem intramolecular hydroamination/asymmetric semipinacol rearrangement reaction catalyzed by chiral silver phosphate. During the course of the study it was observed that an advanced intermediate could be obtained in enantiopure form by enantiomer separation on silica gel.



Chem. Asian J.
DOI: 10.1002/asia.201101029

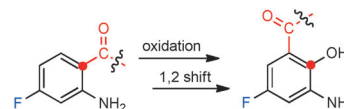


Biosynthesis

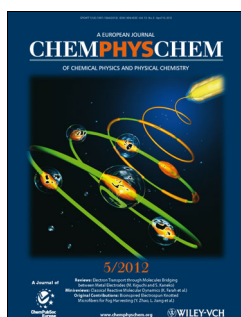
I. Schoenian, C. Paetz, J. S. Dickschat,* B. Aigle, P. Leblond, D. Spiteller*

An Unprecedented 1,2-Shift in the Biosynthesis of the 3-Aminosalicylate Moiety of Antimycins

The new 1,2: The feeding of fluorine-labelled precursors together with mutagenesis experiments revealed that the rare 3-amino-salicylate moiety of antimycins is produced by a particular multicomponent oxidation complex.



ChemBioChem
DOI: 10.1002/cbic.201200033

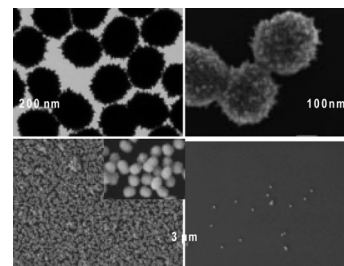


Raman Spectroscopy

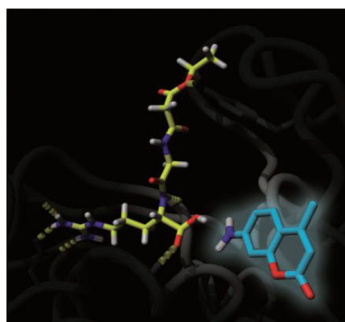
P. Aldeanueva-Potel, E. Carbó-Argibay, N. Pazos-Pérez, S. Barbosa, I. Pastoriza-Santos, R. A. Alvarez-Puebla,* L. M. Liz-Marzán*

Spiked Gold Beads as Substrates for Single-Particle SERS

One to enhance them all: Spiked gold beads are efficient optical enhancers for single-particle SERS ultradetection (see picture), due to the localization of high electric fields at the apex of the tips and the antenna effect displayed by the core.



ChemPhysChem
DOI: 10.1002/cphc.201101014



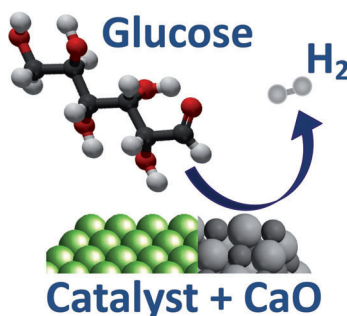
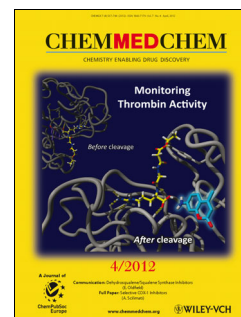
ChemMedChem
DOI: 10.1002/cmdc.201100560

Peptide Chemistry

S. S. van Berkel, B. van der Lee, F. L. van Delft, R. Wagenvoort, H. C. Hemker, F. P. J. T. Rutjes*

Fluorogenic Peptide-Based Substrates for Monitoring Thrombin Activity

An eye on thrombin: A series of fluorogenic peptidyl-AMC substrates were synthesized and subjected to a biological evaluation to determine their suitability in the thrombin generation test (TGT). Evaluation of the acquired thrombin generation curves showed that several of these substrates have excellent potential for replacement of the substrate in current use.



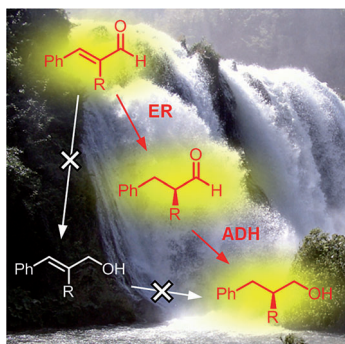
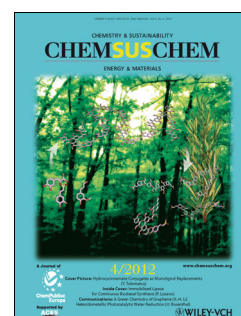
ChemSusChem
DOI: 10.1002/cssc.201100566

Renewable Hydrogen

L. He, D. Chen*

Hydrogen Production from Glucose and Sorbitol by Sorption-Enhanced Steam Reforming: Challenges and Promises

One-pot stew of sugars: The steam reforming of sugars, such as sorbitol and glucose, with an integrated CO₂ capture using a calcium-based acceptor is demonstrated to give hydrogen of very high purity and improved yield in a single step, while the risk of coke formation compared to conventional steam reforming is reduced. However, there is a trade-off between hydrogen selectivity and yield. High temperatures lead to high hydrogen yields with relatively low purity.



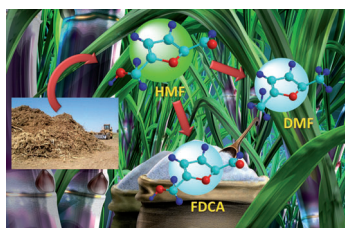
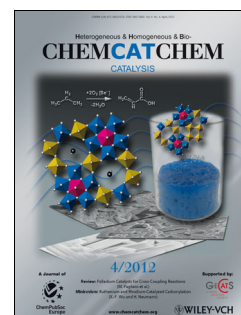
ChemCatChem
DOI: 10.1002/cctc.201100418

Biocatalysis

E. Brenna, F. G. Gatti,* D. Monti, F. Parmeggiani, A. Sacchetti

Cascade Coupling of Ene Reductases with Alcohol Dehydrogenases: Enantioselective Reduction of Prochiral Unsaturated Aldehydes

Hear O'YE, hear O'YE! The combination of the in situ substrate feeding product removal technology with a multienzymatic cascade system (old yellow enzyme and horse liver alcohol dehydrogenase) increased both the yields and enantioselectivities in the reduction of α -substituted cinnamaldehydes.



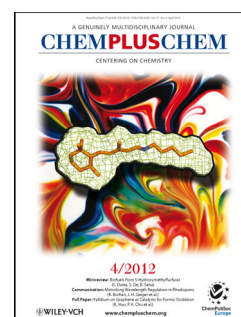
ChemPlusChem
DOI: 10.1002/cplu.201100035

Biofuels

S. Dutta,* S. De, B. Saha*

A Brief Summary of the Synthesis of Polyester Building-Block Chemicals and Biofuels from 5-Hydroxymethylfurfural

Out of the woods: Considerable advances have been made for the synthesis of furan-based polyester building blocks, especially 2,5-furandicarboxylic acid (FDCA), by using nanoparticulate gold catalysts. This Minireview discusses the fundamental aspects of using nanoparticulate catalysts for the aerobic oxidation of biomass-derived 5-hydroxymethylfurfural (HMF) into FDCA and selective transformation of HMF into potential biofuels (DMF = 2,5-dimethylfuran).



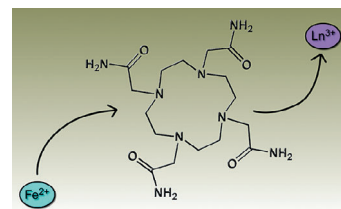


MRI Contrast Agents

S. J. Dorazio, J. R. Morrow*

The Development of Iron(II) Complexes as ParaCEST MRI Contrast Agents

Paramagnetic metal ions are important for the development of MRI contrast agents that function through chemical exchange saturation transfer (CEST or paraCEST). Recent work shows that Fe^{II} paraCEST MRI contrast agents are promising new candidates to add to the current repertoire of lanthanide(III) complex contrast agents.



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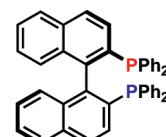


Phosphane Basicity

K. Haav, J. Saame, A. Kütt, I. Leito*

Basicity of Phosphanes and Diphosphanes in Acetonitrile

The basicities of a number of important phosphanes and diphosphanes have been determined in the solvent acetonitrile. The relationship between basicity and structure was examined and compared with amines and diamines.



BINAP $pK_a = 7.80$
BINAPH⁺ $pK_a = 3.8$

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DOI: 10.1002/ejoc.201200009

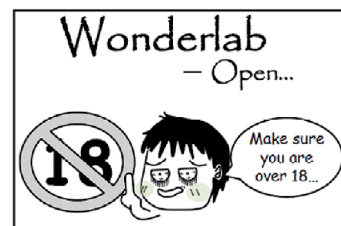


Wonderlab Comic - Open

Sophie Lin

Wonderlab Comic - Open

To most people "open" is just a verb. But, as we discover in this month's comic, in a laboratory it can also mean "dangerous". For in every lab there are three cursed objects that should never be opened - and Wonderlab is no different ...



ChemViews magazine
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