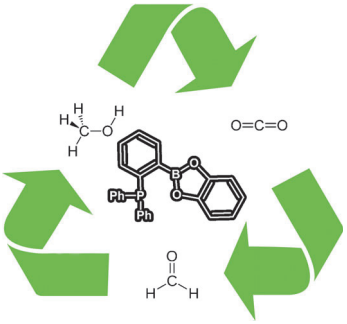
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Organocatalysis

F.-G. Fontaine,* M.-A. Courtemanche, M.-A. Légaré

Transition-Metal-Free Catalytic Reduction of Carbon Dioxide

Less is more: Metal-free systems, including frustrated Lewis pairs (FLPs) have been shown to bind CO_2. By reducing the Lewis acidity and basicity of the ambiphilic system, it is possible to generate active catalysts for the deoxygenative hydroboration of carbon dioxide to methanol derivatives with conversion rates comparable to those of transition-metal-based catalysts (see scheme).



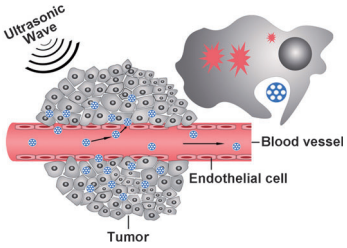
Chem. Eur. J.
DOI: **10.1002/chem.201304376**

Nanoparticles

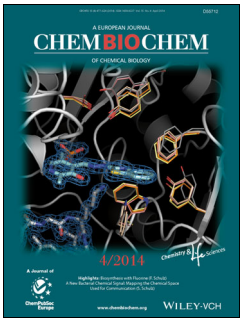
Y. Zhao, Y. Zhu,* J. Fu, L. Wang

Effective Cancer Cell Killing by Hydrophobic Nanovoid-Enhanced Cavitation under Safe Low-Energy Ultrasound

Seeds of success: After accumulation in tumors and endocytosis to lysosomes, mesoporous silica nanoparticles with internal hydrophobic mesopores can act as bubble nucleation seeds responding to low-intensity ultrasound. This drastically amplifies the ultrasonic cavitation effect, a process that can disrupt the lysosomal membrane and release lysosomal proteases, thus leading to cell necrosis.



Chem. Asian J.
DOI: **10.1002/asia.201301333**

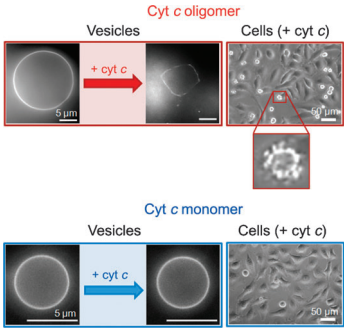


Membrane Biophysics

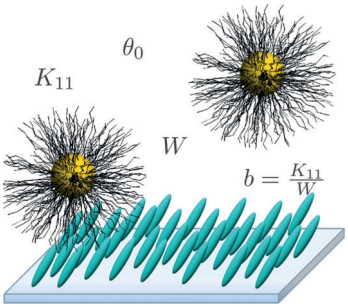
S. Junedi, K. Yasuhara, S. Nagao, J.-i. Kikuchi, S. Hirota*

Morphological Change of Cell Membrane by Interaction with Domain-Swapped Cytochrome *c* Oligomers

A sharing strategy: Domain-swapped oligomeric cyt *c* interacted more strongly than monomers with anionic phospholipid-containing vesicles and the outer membrane of HeLa cells. Oligomeric cyt *c* induced lateral phase separation of lipids in vesicles, thereby leading to membrane disruption. Oligomeric cyt *c* also induced morphological changes in HeLa cells.



ChemBioChem
DOI: **10.1002/cbic.201300728**



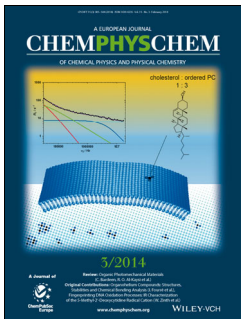
ChemPhysChem
DOI: **10.1002/cphc.201301054**

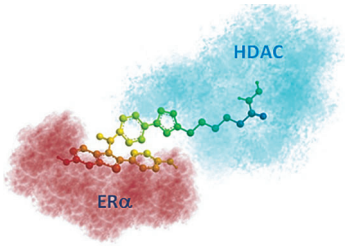
Liquid Crystals

M. Urbanski, J. Mirzaei, T. Hegmann, H.-S. Kitzerow*

Nanoparticle Doping in Nematic Liquid Crystals: Distinction between Surface and Bulk Effects by Numerical Simulations

NPs at the edge: Functionalized nanoparticles can have a great impact on the electro-optic response of a nematic host, both when dispersed in the bulk and when residing at the LC/substrate interface. Dispersions featuring a combination of both possible effects are studied and a method for distinguishing bulk and surface effects is presented. Experimental data is confirmed by numerical simulations.





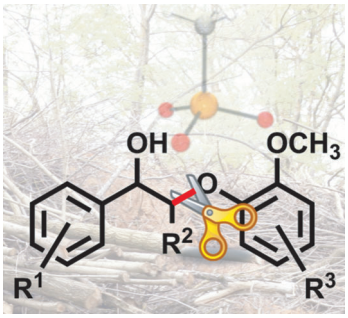
ChemMedChem
DOI: **10.1002/cmdc.201300270**

Epigenetics

H. K. Patel, M. I. Siklos, H. Abdelkarim, E. L. Mendonca, A. Vaidya, P. A. Petukhov, G. R. J. Thatcher*

A Chimeric SERM–Histone Deacetylase Inhibitor Approach to Breast Cancer Therapy

Two in one: The combination of HDAC inhibition and selective estrogen receptor modulation caused time-dependent killing of breast cancer cells. A hybrid molecule, acting as HDAC inhibitor and selective estrogen receptor modulator (SERM), has potential, but can both activities be retained in killing ER (−) breast cancer cells?



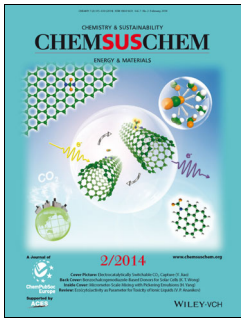
ChemSusChem
DOI: **10.1002/cssc.201300918**

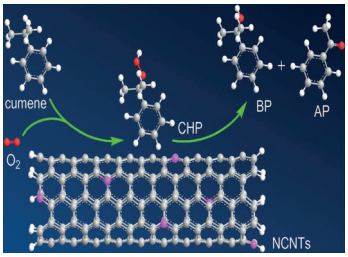
Biomass Conversion

R. G. Harms, I. I. E. Markovits, M. Drees, h. m. W. A. Herrmann, M. Cokoja,* F. E. Kühn*

Cleavage of C–O Bonds in Lignin Model Compounds Catalyzed by Methyldioxorhenium in Homogeneous Phase

C–O Re business: Methyldioxorhenium (MDO) is an efficient catalyst for the C–O bond cleavage of various aryl ethers in homogeneous phase; a reaction that serves as a model towards the depolymerization of lignin and its β-O-4 bonds. The mechanism of the reaction is elucidated by means of NMR spectroscopy, GC, and DFT studies.





ChemCatChem
DOI: **10.1002/cctc.201300909**

Aerobic Oxidation

S. Liao, Y. Chi, H. Yu, H. Wang, F. Peng*

Tuning the Selectivity in the Aerobic Oxidation of Cumene Catalyzed by Nitrogen-Doped Carbon Nanotubes

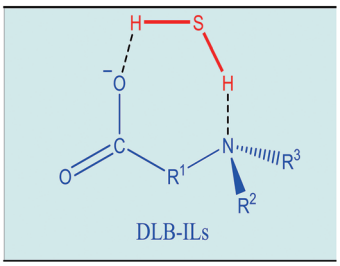
Cumene to my nanotube: Nitrogen-doped carbon nanotubes (NCNTs) promote the decomposition of hydroperoxide cumene (CHP) with exceptionally high activity, resulting in strongly increased cumene conversions, and extraordinarily high selectivity to acetophenone (AP) and 2-benzyl-2-propanol (BP).

Ionic Liquids

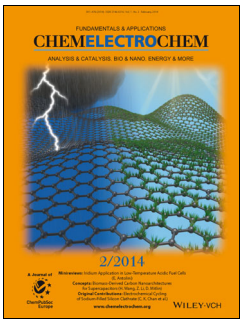
K. Huang, D.-N. Cai, Y.-L. Chen, Y.-T. Wu,* X.-B. Hu,* Z.-B. Zhang

Dual Lewis Base Functionalization of Ionic Liquids for Highly Efficient and Selective Capture of H_2S

Shared labor: The dual Lewis base functionalization strategy enables the cooperative interaction of carboxyl···H_2S···amine, thus significantly enhancing the H_2S absorption capacity (see scheme). Conversely, the interaction of CO_2 with the carboxylate group is weakened by the conjoint tertiary amine group through the electron-withdrawing effect. The interaction of CO_2 with the amine group is unfavorable owing to the absence of active protons in CO_2. Thus, CO_2 solubility is limited.



ChemPlusChem
DOI: **10.1002/cplu.201300365**

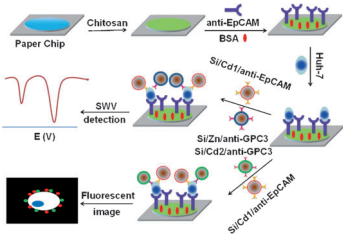


Sensors

Y. Wu, P. Xue, K. M. Hui,* Y. Kang*

Electrochemical- and Fluorescent-Mediated Signal Amplifications for Rapid Detection of Low-Abundance Circulating Tumor Cells on a Paper-Based Microfluidic Immunodevice

Paper diagnosis: A procedure for electrochemical and fluorescent detection of circulating tumor cells using a paper-based microfluidic immunodevice is presented.



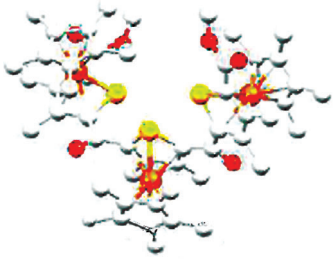
ChemElectroChem
DOI: **10.1002/celc.201300194**

Phosphametallocenes

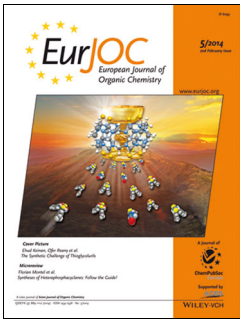
D. Carmichael,* X.-F. le Goff, E. Muller

Oligo(metallocene)s Containing Keto-Bridged Phospholyl Rings

The homologation of a 2,5-diester substituted phosphametallocene into a 2′,5-diester substituted triphosphametallocene array is presented. The high stereochemical selectivity for the (±)-(*R**,*R**) configured triphosphametallocene product is shown to result from an autotemplation of the reaction pathway.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201301144**

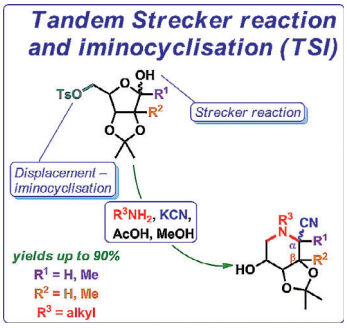


Iminosugar Synthesis

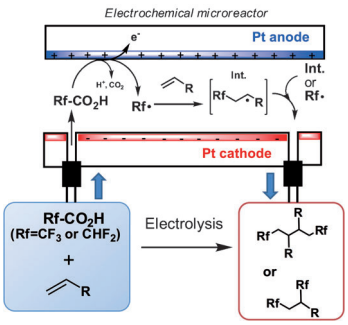
B. J. Ayers,* G. W. J. Fleet

One-Pot Tandem Strecker Reaction and Iminocyclisations: Syntheses of Trihydroxypiperidine α-Iminonitriles

A one-pot method for the synthesis of trihydroxypiperidine α-iminonitriles is presented. The key step is a tandem Strecker reaction and iminocyclisation. Piperidine α-iminonitriles are precursors to biologically relevant trihydroxypipecolic acids and their derivatives.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201301705**



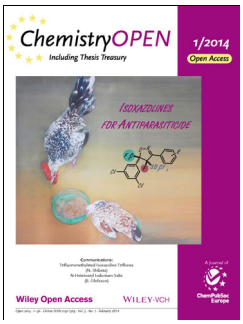
ChemistryOpen
DOI: **10.1002/open.201300039**

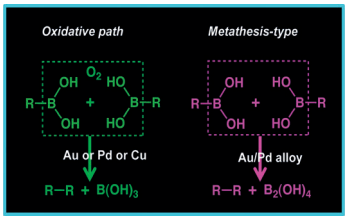
Flow Chemistry

K. Arai, K. Watts, T. Wirth*

Difluoro- and Trifluoromethylation of Electron-Deficient Alkenes in an Electrochemical Microreactor

In the flow! In an electrochemical microreactor, Kolbe electrolysis of acetic acid derivatives allows facile difluoro- and trifluoromethylation of electrondeficient alkenes. Compared with bulk reactions, higher yields are achieved at room temperature and in short reaction times.





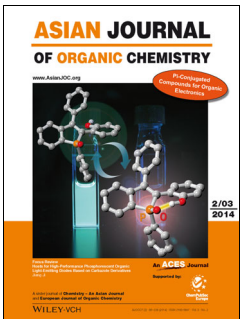
Asian J. Org. Chem.
DOI: **10.1002/ajoc.201300283**

Organoboron Chemistry

R. N. Dhital, H. Sakurai*

Oxidative Coupling of Organoboron Compounds

B on the oxidative path: The oxidative coupling of organoboron (C_{sp^2}–B or C_{sp^3}–B) nucleophiles is one of the most powerful protocols for the construction of carbon–carbon bonds in organic chemistry. This review summarizes both the seminal early work and recent developments in the field of transition-metal-catalyzed oxidative homocoupling reactions of organoboron nucleophiles along with the mechanistic details.



ChemViews magazine
DOI: **10.1002/chemv.201400001**

Chemistry Communication

V. Köster

Behind the Scenes of the Wonderlab Cartoon

Sophie Lin, Taiwan, is the author of the Wonderlab Comic Series in *ChemViews Magazine* and an R&D chemist. Her cartoons depict, in a humorous way, the ups and downs of working in a laboratory. In an interview, she gives insights into how she initially came up with the idea to use cartoons as a unique way to present her research and on the inspiration for the characters and stories.