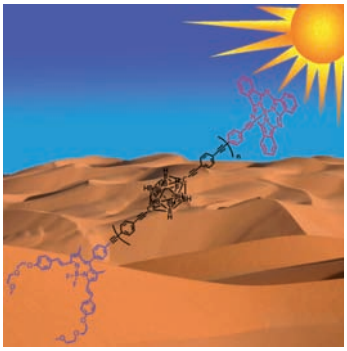
Donor–Acceptor Systems

D. Hablot, A. Sutter, P. Retailleau, R. Ziessel*

Unsymmetrical *p*-Carborane Backbone as a Linker for Donor–Acceptor Dyads

Fluorescent nanorods: Donor–acceptor dyads based on novel unsymmetrically disubstituted *closo*-1,12-dicarbadecaboranes have been prepared in a completely controlled manner by using a three-step procedure. Dyads with different donor–acceptor spacing were thereby obtained. Efficient energy transfer from the donor to the acceptor was determined in fluid solution at room temperature.



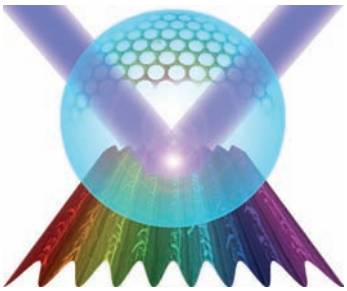
Chem. Eur. J.
DOI: **10.1002/chem.201103307**

Superhydrophobic Surfaces

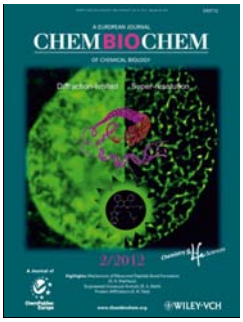
J.-N. Wang, R.-Q. Shao, Y.-L. Zhang,* L. Guo, H.-B. Jiang, D.-X. Lu, H.-B. Sun*

Biomimetic Graphene Surfaces with Superhydrophobicity and Iridescence

The wonderful world of graphene! A simple one-step fabrication of biomimetic graphene surfaces that possess both superhydrophobicity and bright structural color is presented. By using two-beam laser interference, construction of periodic grating microstructures and removal of hydrophilic oxygen groups were realized at the same time.



Chem. Asian J.
DOI: **10.1002/asia.201100882**

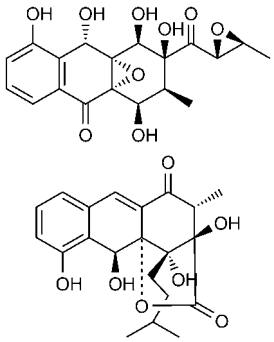


Biosynthesis

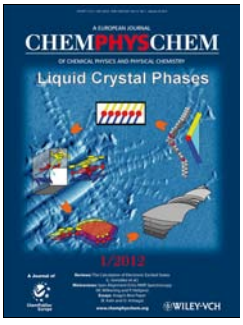
X. Yan, K. Probst, A. Linnenbrink, M. Arnold, T. Paululat, A. Zeeck, A. Bechthold*

Cloning and Heterologous Expression of Three Type II PKS Gene Clusters from *Streptomyces bottropensis*

Clusters of color: Three type II PKS gene clusters (*msn*, *mec*, and *rsl*) in *Streptomyces bottropensis* were screened. Heterologous expression of the *msn* and *rsl* clusters in *Streptomyces albus* led to the production of didesmethylmensacarcin (DDMM), and of rishirilide A and B, respectively. No product was isolated from *mec* (a putative spore pigment biosynthesis gene cluster).



ChemBioChem
DOI: **10.1002/cbic.201100574**

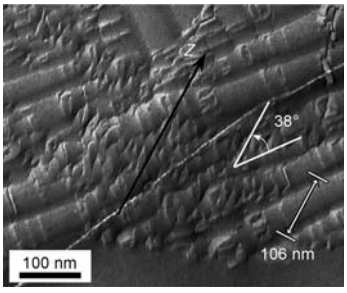


Self-Assembly

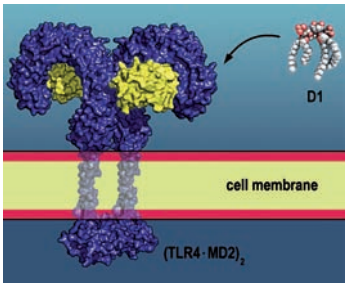
D. Chen,* M.-S. Heberling, M. Nakata, L. E. Hough, J. E. Maclennan, M. A. Glaser, E. Korblova, D. M. Walba, J. Watanabe, N. A. Clark*

Structure of the B4 Liquid Crystal Phase near a Glass Surface

Nanofilaments: The B4 liquid crystal phase of bent-core molecules is one of the most complex hierarchical self-assemblies in soft materials. Near the glass substrate, the formation of twisted nanofilaments is suppressed and the chiral smectic layers self-assemble into parabolic focal conic arrays. Further from the substrate, homochiral helical nanofilaments nucleate smoothly on top of the underlying layers (see picture).



ChemPhysChem
DOI: **10.1002/cphc.201100589**



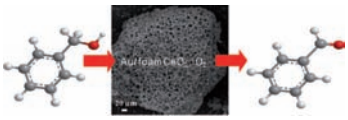
ChemMedChem
DOI: **10.1002/cmdc.201100494**

Immunochemistry

M. Piazza, V. Calabrese, G. Damore, R. Cighetti, T. Gioannini,*
J. Weiss,* F. Peri*

A Synthetic Lipid A Mimetic Modulates Human TLR4 Activity

The sincerest form of flattery! A novel, symmetric lipid A mimetic (D1) formed by two glucose units linked through a 6-6' succinic diamide linker is active in modulating the activity of human TLR4. D1 inhibits endotoxin-stimulated TLR4 activation by inhibiting interaction of endotoxin with both receptors CD14 and MD-2 (associated to TLR4). D1 also has weak TLR4 agonist activity that makes it a promising lead compound for development as a vaccine adjuvant.



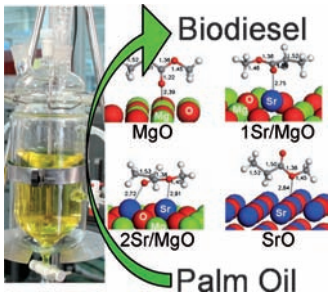
ChemSusChem
DOI: **10.1002/cssc.201100374**

Sustainable Chemistry

M. Alhumaimess, Z. Lin, W. Weng, N. Dimitratos, N. F. Dummer,
S. H. Taylor, J. K. Bartley, C. J. Kiely, G. J. Hutchings*

Oxidation of Benzyl Alcohol by using Gold Nanoparticles Supported on Ceria Foam

Tailored foam bed: Cerium oxide with a foam morphology is used as a support for gold nanoparticles. The foams are synthesized using L-asparagine to produce a cerium coordination polymer foam, which is calcined to give the oxide foam. The activity of the Au/foamCeO_2 for solvent-free benzyl alcohol oxidation is superior to standard Au/CeO_2 catalysts.



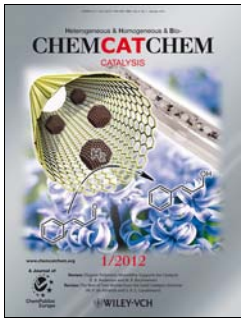
ChemCatChem
DOI: **10.1002/cctc.201100346**

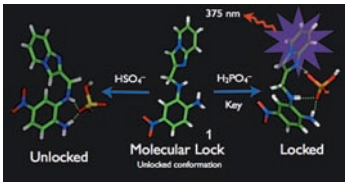
Biodiesel

K. Faungnawakij,* B. Yoosuk, S. Namuangruk, P. Krasae,
N. Viriya-empikul, B. Puttasawat

Sr–Mg Mixed Oxides as Biodiesel Production Catalysts

Build a base in your base: The synergistic effect of Sr and Mg species acting as heterogeneous catalysts is observed in biodiesel production as it enhances the activity, which is attributable to new strong basic sites as evidenced by using CO_2-TPD measurements and DFT calculations.





ChemPlusChem
DOI: **10.1002/cplu.201100036**

Molecular Locks

S. Dalapati, M. A. Alam,* S. Jana, R. Saha, S. Biswas, N. Guchhait*

A Molecular Lock and Key: "Unlocked–Locked" Conformational Switching of a Receptor by Anions

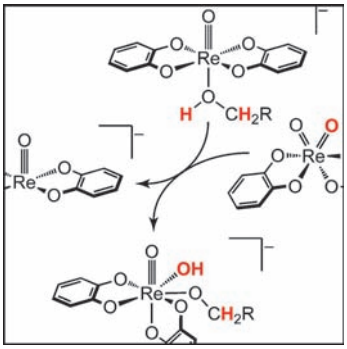
Lock up your valuables: Receptor **1** acts as a "molecular lock" and anions act as "keys"; $H_2PO_4^-$ can "lock" **1** by switching it from its "unlocked" conformation, however, the structurally similar HSO_4^- cannot "lock" receptor **1** as evidenced by single-crystal X-ray analysis (see scheme). The "unlocked–locked" conformational switching of **1** was investigated by monitoring changes in fluorescence intensity in the presence of different anions.

Redox-Active Ligand Catalysis

C. A. Lippert, K. Riener, J. D. Soper*

Aerobic Alcohol Oxidations Catalyzed by Oxorhenium Complexes Containing Redox-Active Ligands

The capacity of oxorhenium(V) anions with redox-active catecholate ligands to homolyze O_2 and generate dioxorhenium(VII) products is utilized for oxidase-type alcohol oxidations. Formation of the active oxidant requires both the dioxo and monooxo species. The scope and limitations of this redox-active ligand-mediated catalysis are discussed.



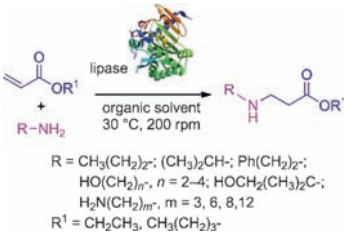
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201101044**

Enzyme Catalytic Promiscuity

L. N. Monsalve, F. Gillanders, A. Baldessari*

Promiscuous Behavior of *Rhizomucor miehei* Lipase in the Synthesis of *N*-Substituted β-Amino Esters

A mild and efficient enzymatic method for the aza-Michael addition of mono- and bifunctional amines to acrylates was developed. The high substrate specificity showed by *Rhizomucor miehei* lipase as the catalyst for this reaction was a key feature for obtaining various *N*-substituted β-amino esters in high yield and purity.



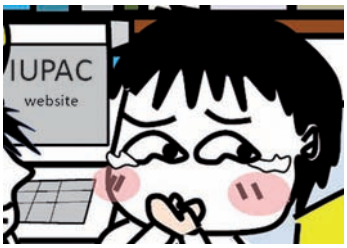
Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201101624**

Wonderlab Comic – Fashion Chemistry

Sophie Lin

Wonderlab Comic – Fashion Chemistry

The IUPAC recommended new proposed names for the latest heavy elements to be added to the periodic table. The naming of the elements 114 and 116 cause a stir in the Wonderlab. In the this month's comic K Face, Sophie and Richpunzel meet.



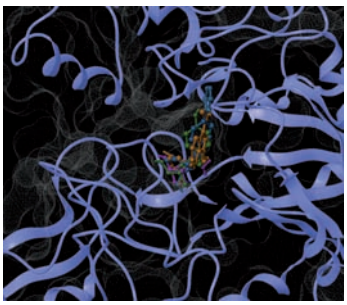
ChemViews magazine
DOI: **10.1002/chemv.201200003**

Enzyme–Inhibitor Interactions

A. Hernández Daranas,* S. Koteich Khatib, R. Lysek, P. Vogel, J. A. Gavín*

Determining the Role of the Aromatic Ring of *N*-Arylmethyl *ent*-conduramine F-1 in their Interactions with α-Glucosidases by Saturation Transfer Difference NMR Spectroscopy Experiments

Saturation transfer difference (STD) NMR spectroscopy was used to study the role of aromatic moieties in the inhibition of α-glucosidases by *N*-arylmethyl *ent*-conduramine F-1. STD epitope mapping and molecular docking simulations provide new insights into the structure-based design of drugs targeting this enzyme (see figure).



ChemistryOPEN
DOI: **10.1002/open.201100004**