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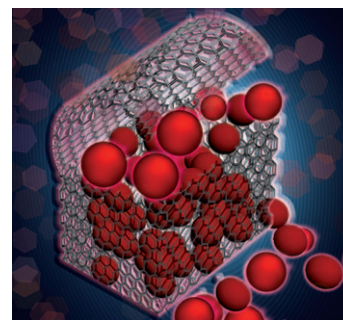


## Luminescent Carbon Nanotubes

L. Maggini, J. Mohanraj, H. Traboulsi, A. Parisini, G. Accorsi, N. Armaroli,\* D. Bonifazi\*

A Luminescent Host–Guest Hybrid between a  $\text{Eu}^{\text{III}}$  Complex and MWCNTs

**Shining treasure:** Like treasure safeguarded in a chest, a tris-hexa-fluoro acetylacetonate  $\text{Eu}^{\text{III}}$  complex was encapsulated inside MWCNTs to preserve its luminescent output (see figure). These structures could open the way to novel luminescent hybrid materials with potential applications in biological and materials sciences.



Chem. Eur. J.  
DOI: 10.1002/chem.201101216

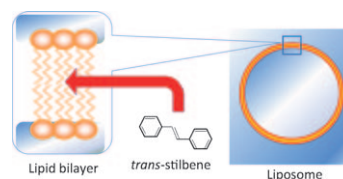


## Fluorescence Spectroscopy

Y. Nojima, K. Iwata\*

Lipid Bilayer Membrane of Egg-PC Liposome Evaluated as Chemical Reaction Field with Picosecond Time-Resolved Fluorescence Spectroscopy

**Egg on your face:** Viscosity inside the lipid bilayer of egg-PC liposome is estimated by picosecond time-resolved fluorescence spectroscopy. The presence of two solvation environments within the bilayer is suggested, where one environment is 50 to 100 times more viscous than the other. The use of *trans*-stilbene as a probe provides valuable information on the environments inside the lipid bilayers as a field for chemical reactions.



Chem. Asian J.  
DOI: 10.1002/asia.201100143

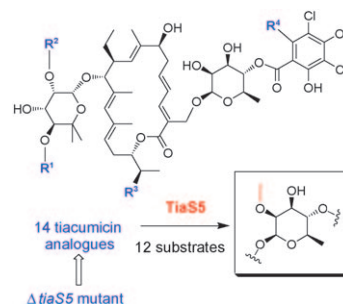


## Antibodies

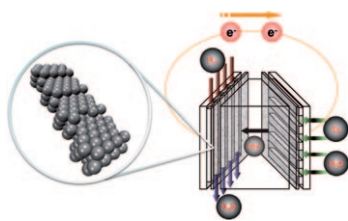
S. Niu, T. Hu, S. Li, Y. Xiao, L. Ma, G. Zhang, H. Zhang, X. Yang, J. Ju, C. Zhang\*

Characterization of a Sugar-O-methyltransferase TiaS5 Affords New Tiacumicin Analogues with Improved Antibacterial Properties and Reveals Substrate Promiscuity

**Promiscuous methyltransferase** TiaS5 is involved in the 2'-O-methylation in tiacumicin B biosynthesis. The  $\Delta\text{tiaS5}$  mutant is capable of affording 14 tiacumicin analogues, 11 of which are new and 2 of which exhibit improved antibacterial properties. TiaS5 is biochemically characterized as a flexible enzyme utilizing 12 tiacumicin substrates.



ChemBioChem  
DOI: 10.1002/cbic.201100129



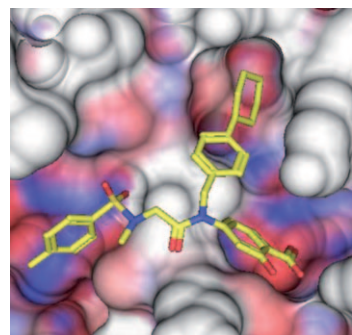
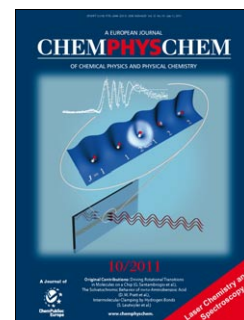
ChemPhysChem  
DOI: 10.1002/cphc.201100247

## Fuel Cells

G. García,\* M. T. M. Koper

Carbon Monoxide Oxidation on Pt Single Crystal Electrodes: Understanding the Catalysis for Low Temperature Fuel Cells

**Catalytic surface reactions:** New fundamental advances in the field of electrocatalysis are discussed with the purpose of better understanding the reactions occurring at fuel cell catalysts in alkaline media (see picture). The present review may help to improve the fabrication of novel electrodes in order to enhance the performance and to decrease the cost of low temperature fuel cells.



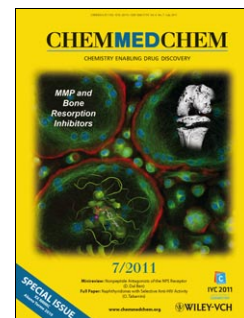
ChemMedChem  
DOI: 10.1002/cmdc.201100194

## Antitumor Agents

S. Fletcher, B. D. G. Page, X. Zhang, P. Yue, Z. H. Li, S. Sharmeen, J. Singh, W. Zhao, A. D. Schimmer, S. Trudel, J. Turkson,\* P. T. Gunning\*

Antagonism of the Stat3–Stat3 Protein Dimer with Salicylic Acid Based Small Molecules

**Where it's Stat:** We developed Stat3 inhibitors that show potent suppression of Stat3 DNA binding activity ( $IC_{50} \sim 18\text{--}50 \mu\text{M}$ ), disrupt Stat3–pTyr peptide interactions ( $K_i \sim 15\text{--}41 \mu\text{M}$ ), potentially inhibit Stat3 phosphorylation in both breast and multiple myeloma tumor cells, suppress the expression of Stat3 target genes, and induce antitumor effects in tumor cells harboring activated Stat3 protein.



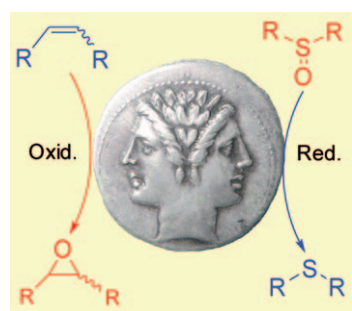
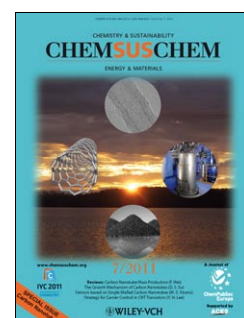
ChemSusChem  
DOI: 10.1002/cssc.201100137

## Ionic Liquids

S. Saravanamurugan, O. Nguyen Van Buu, A. Riisager\*

Conversion of Mono- and Disaccharides to Ethyl Levulinate and Ethyl Pyranoside with Sulfonic Acid-Functionalized Ionic Liquids

**Value-added chemicals from sugars:** Sulfonic acid-functionalized ionic liquids are attractive and promising catalyst for the conversion of sugars to ethyl levulinate and ethyl-D-glucopyranoside in ethanol. These task-specific ionic liquids can be recovered and reused in at least three cycles in the conversion of fructose to ethyl levulinate without any loss of activity.



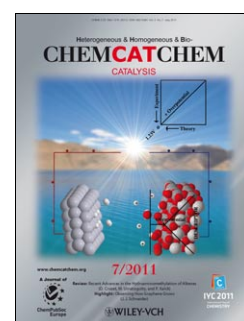
ChemCatChem  
DOI: 10.1002/cctc.201100007

## Epoxidation

S. Krackl, A. Company, S. Enthaler,\* M. Driess\*

Low-Valent Molybdenum-Based Dual Pre-Catalysts for Highly Efficient Catalytic Epoxidation of Alkenes and Deoxygenation of Sulfoxides

**Molybdenum, the hero:** A series of triply bonded dimolybdenum(III) hexaalkoxides were tested as pre-catalysts in olefin epoxidation and sulfoxide deoxygenation. The complexes exhibited high performance in both types of reactions. For example, in the catalytic epoxidation of cyclooctene, turnover frequencies of above  $60000 \text{ h}^{-1}$  were achieved at elevated temperatures ( $\approx 50^\circ\text{C}$ ). In general, their activities are very high, surpassing those previously reported for other molybdenum-based catalysts in analogous transformations.



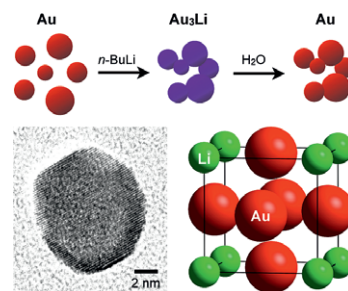


### Polar Intermetallic Nanoparticles

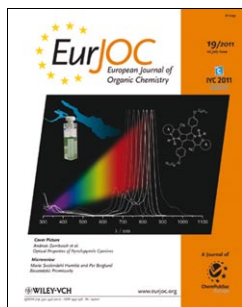
J. F. Bondi, R. E. Schaak\*

Solution Chemistry Synthesis of Intermetallic Gold–Lithium Nanoparticles

Colloidal Au nanoparticle seeds react with *n*-butyllithium to form colloidal nanoparticles of  $L1_2$ -type  $Au_3Li$ . This compound represents a prototype binary polar intermetallic compound containing a highly electropositive element. Reaction with water decomposes  $Au_3Li$ , regenerating Au.



*Eur. J. Inorg. Chem.*  
DOI: 10.1002/ejic.201100276

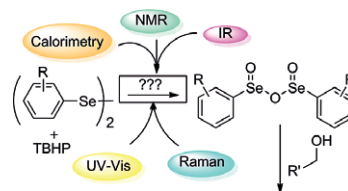


### Selenium-Catalyzed Oxidations

J. C. van der Toorn, G. Kemperman, R. A. Sheldon, I. W. C. E. Arends\*

Studies on Substituted Aromatic Diselenides as Catalysts for Selective Alcohol Oxidation Using *tert*-Butyl Hydroperoxide

The oxidation steps from  $Ph_2Se_2$  to benzeneseleninic anhydride, which is a good dehydrogenation agent, have been elucidated by a combination of spectroscopic techniques, both in situ and ex situ. The oxidation potentials of derivatives of this anhydride have been investigated in the oxidation of 1-decanol.



*Eur. J. Org. Chem.*  
DOI: 10.1002/ejoc.201100487

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