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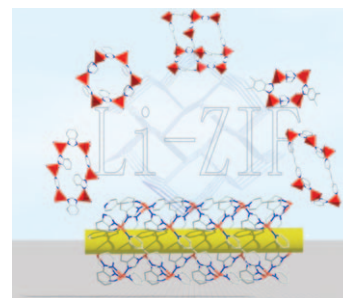


Metal–Organic Frameworks

S.-T. Zheng, Y. Li, T. Wu, R. A. Nieto, P. Feng,* X. Bu*

Porous Lithium Imidazolate Frameworks Constructed with Charge-Complementary Ligands

Lightest tetrahedral node: While silica-type tetrahedral frameworks can be readily emulated with divalent metal compounds (e.g., zinc imidazolate frameworks), it is more difficult with Li^+ . Here, a new series of Li-based ZIFs has been synthesized using a strategy based on charge-complementary ligands designed to prevent excessively negative charge surrounding Li sites. Among them, some exhibit a high CO_2 adsorption capacity (e.g., $49 \text{ cm}^3 \text{ g}^{-1}$ at 273 K and 1 atm).



Chem. Eur. J.
DOI: 10.1002/chem.201002316

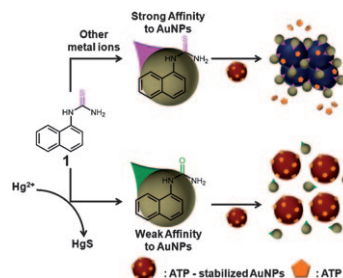


Colorimetric Sensors

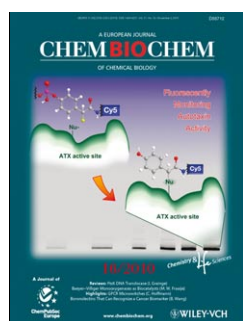
S. Kim, N. H. Lee, S. H. Seo, M. S. Eom, S. Ahn, M. S. Han*

Selective Colorimetric Sensor for Hg^{2+} Ions Using a Mixture of Thiourea Derivatives and Gold Nanoparticles Stabilized with Adenosine Triphosphate

The mercury prize: A highly selective and sensitive unmodified gold-nanoparticle (AuNP)-based colorimetric sensor for Hg^{2+} ions in aqueous media uses the Hg^{2+} -promoted desulfurization reaction of a thiourea derivative and the reactivity of a thiourea derivative to gold nanoparticles. This sensor also allows a quantitative assay of the analyte in a neutral aqueous solution, down to a concentration of 10^{-7} M .



Chem. Asian J.
DOI: 10.1002/asia.201000483

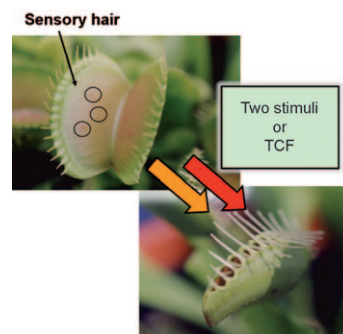


Polysaccharides

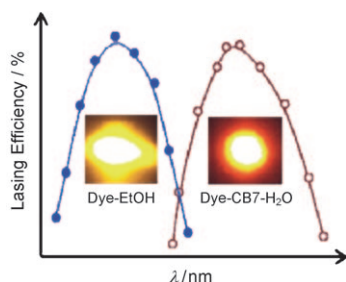
M. Ueda,* T. Tokunaga, M. Okada, Y. Nakamura, N. Takada, R. Suzuki, K. Kondo

Trap-Closing Chemical Factors of the Venus Flytrap (*Dionaea muscipula* Ellis)

“Memory” has been observed in the leaf closure of the insectivorous Venus flytrap (*Dionaea muscipula*). The rapid closure of the traps requires two stimuli within 30 s on the sensory hairs of their internal surface. We found that *Dionaea* has two endogenous chemical factors that induce the closure of traps without stimuli.



ChemBioChem
DOI: 10.1002/cbic.201000392



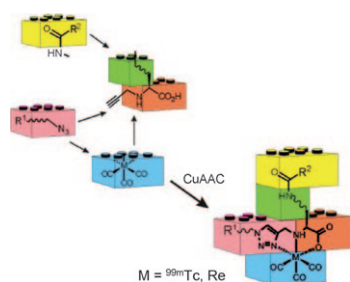
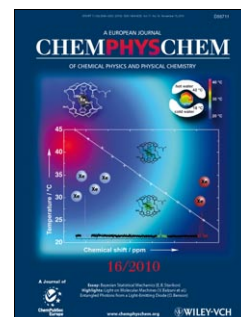
ChemPhysChem
DOI: 10.1002/cphc.201000532

Fluorescent dyes

J. Mohanty,* K. Jagtap, A. K. Ray,* W. M. Nau,* H. Pal

Molecular Encapsulation of Fluorescent Dyes Affords Efficient Narrow-band Dye Laser Operation in Water

Supramolecular dye lasers: Two practically useful narrow-band dye laser systems in aqueous solution have been demonstrated, which are based on the addition of small amounts of the macrocycle cucurbit[7]uril as stabilizing agent (see picture). In comparison to conventional dye-EtOH systems, the novel supramolecular dye systems are not only similarly efficient with complementary tuning ranges, but possess superior thermo-optic characteristics and unmatched beam profiles.



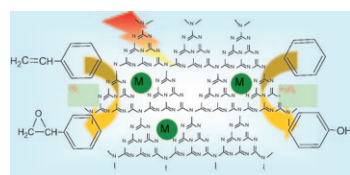
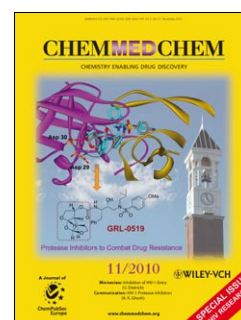
ChemMedChem
DOI: 10.1002/cmdc.201000342

Imaging Agents

T. L. Mindt,* H. Struthers, B. Spingler, L. Brans, D. Tourwé, E. García-Garayoa, R. Schibli*

Molecular Assembly of Multifunctional ^{99m}Tc Radiopharmaceuticals Using “Clickable” Amino Acid Derivatives

Extended “click-to-chelate”. The use of side-chain-functionalized N(α)-propargyl amino acid precursors enables the concurrent one-pot “click” assembly of multifunctional conjugates that contain a $^{99m}\text{Tc}(\text{CO})_3$ chelate for SPECT and two different biological and/or chemical entities.



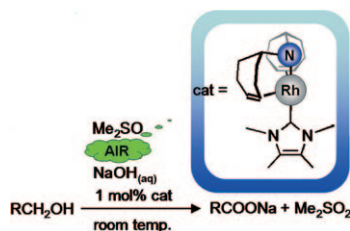
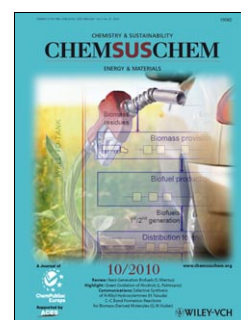
ChemSusChem
DOI: 10.1002/cssc.201000149

Photocatalysis

Z. Ding, X. Chen, M. Antonietti, X. Wang*

Synthesis of Transition Metal-Modified Carbon Nitride Polymers for Selective Hydrocarbon Oxidation

Modification of graphitic carbon nitride (g-C₃N₄) photocatalyst with transition metals is achieved with a simple soft-chemical approach using dicyandiamide and metal chloride as precursors. Fe- and Cu-modified carbon nitrides are shown to be active for the hydroxylation of benzene to phenol with H₂O₂, whereas Co- and Fe-modified samples are shown to be active for the epoxidation of styrene with O₂.



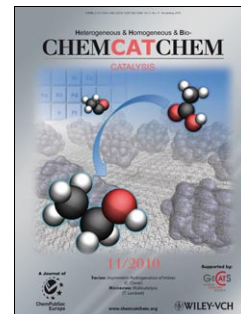
ChemCatChem
DOI: 10.1002/cctc.201000100

Homogeneous Catalysis

S. Annen, T. Zweifel, F. Ricatto, H. Grützmacher*

Catalytic Aerobic Dehydrogenative Coupling of Primary Alcohols and Water to Acids Promoted by a Rhodium(I) Amido N-Heterocyclic Carbene Complex

As good acid gets: With a Rh^I amido olefin complex with an N-heterocyclic carbene ligand as catalyst, the chemoselective aerobic oxidation of primary alcohols to the corresponding carboxylic acids proceeds in aqueous alkaline medium with good to moderate yields under mild conditions. Dimethylsulfoxide serves as stoichiometric co-oxidant.



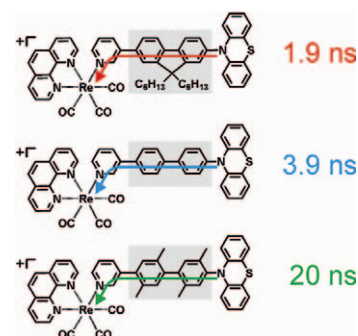


Electron Transfer

M. E. Walther, J. Grilj, D. Hanss, E. Vauthey, O. S. Wenger*

Photoinduced Processes in Fluorene-Bridged Rhenium–Phenothiazine Dyads – Comparison of Electron Transfer Across Fluorene, Phenylene, and Xylene Bridges

The kinetics of a 15 Å electron-transfer step from phenothiazine to a photoexcited rhenium complex depends strongly on the covalent linker between the two redox partners.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.201000645

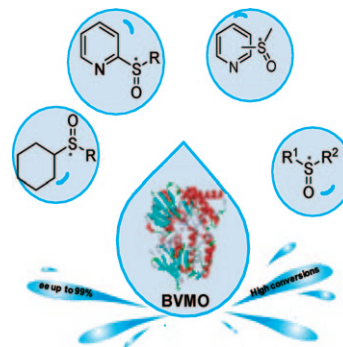


Enzymatic Catalysis

A. Rioz-Martínez, G. de Gonzalo, D. E. Torres Pazmiño, M. W. Fraaije, V. Gotor*

Enzymatic Synthesis of Novel Chiral Sulfoxides Employing Baeyer–Villiger Monooxygenases

A large variety of enantiopure sulfoxides have been obtained by using Baeyer–Villiger monooxygenase catalyzed oxidation in aqueous media under mild reaction conditions. Some reaction parameters were studied to improve the catalytic efficiency of these enzymes.



Eur. J. Org. Chem.

DOI: 10.1002/ejoc.201000890

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