

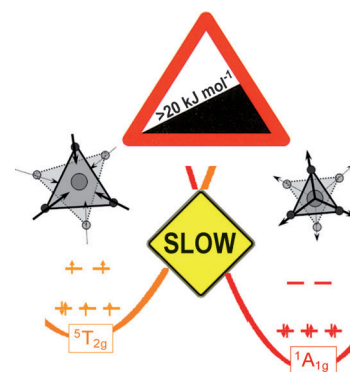


Spin Crossover

P. Stock, T. Pędziński, N. Spintig, A. Grohmann, G. Hörner*

High Intrinsic Barriers against Spin-State Relaxation in Iron(II)-Complex Solutions

Slow relaxation: Exergonic high-spin $\rightarrow$ low-spin relaxation after photoexcitation has been found to be exceedingly slow in a class of iron(II) complexes with hexadentate imine ligands. The thermal activation barriers that arise between the quintet- and singlet-spin manifolds are the highest ever recorded for spin crossover of isolated molecules in free solution (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201203784

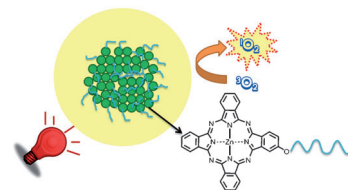


Phthalocyanines

B. Zhao, W. Duan, P.-C. Lo, L. Duan, C. Wu, D. K. P. Ng*

Mono-PEGylated Zinc(II) Phthalocyanines: Preparation, Nanoparticle Formation, and In Vitro Photodynamic Activity

PEGged! A series of mono-PEGylated zinc(II) phthalocyanines for photodynamic therapy with singlet oxygen have been prepared and formulated in aqueous media with different methods. The system based on silica nanoparticles exhibits remarkably high stability and in vitro photocytotoxicity.



Chem. Asian J.
DOI: 10.1002/asia.201200897

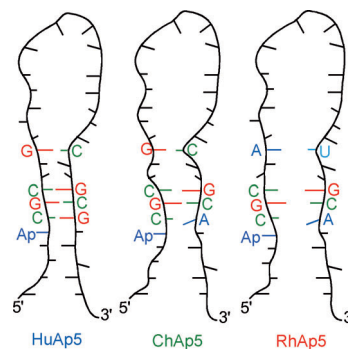


RNA Folding

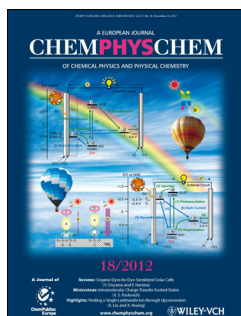
M. S. Dahabieh,* D. Samanta, J.-C. Brodovitch, C. Frech, M. A. O'Neill, B. M. Pinto*

Sequence-Dependent Structural Dynamics of Primate Adenosine-to-Inosine Editing Substrates

An I for an A: Adenosine-to-inosine (A-to-I) RNA editing occurs at a generally higher frequency in humans, compared to other primates. With a focus on the RNA substrate, sequence-dependent conformational exchanges suggest that a fine balance between global duplex stability and local adenosine flexibility orchestrates A-to-I editing levels.



ChemBioChem
DOI: 10.1002/cbic.201200526

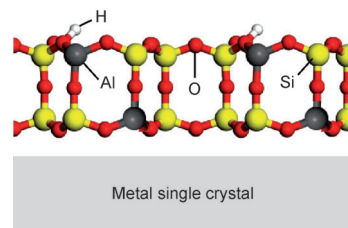


Surface Science

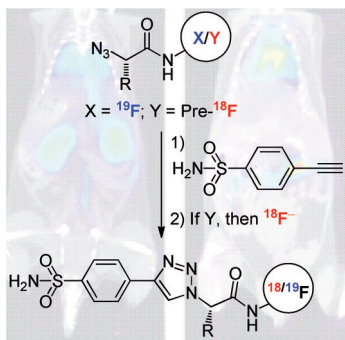
S. Shaikhutdinov,* H.-J. Freund

Metal-Supported Aluminosilicate Ultrathin Films as a Versatile Tool for Studying the Surface Chemistry of Zeolites

Monolayer zeolite? The application of a variety of "surface-science" techniques to elucidate the surface structures and mechanisms of chemical reactions at zeolite surfaces has long been considered as almost impossible. The growth of a thin aluminosilicate film on a metal single crystal under controlled conditions results in adequate and well-defined model systems for zeolite surfaces.



ChemPhysChem
DOI: 10.1002/cphc.201200826



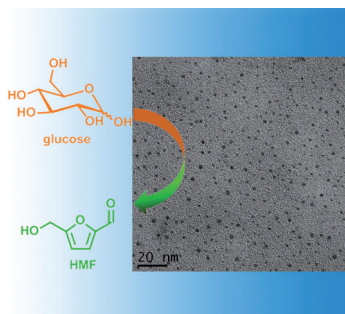
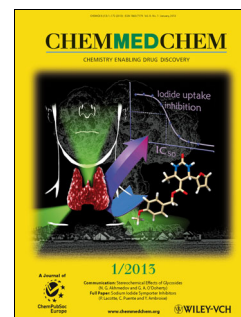
ChemMedChem
DOI: 10.1002/cmdc.201200466

Molecular Imaging

V. P. Mocharla, J. C. Walsh, H. C. Padgett, H. Su, B. Fueger, W. A. Weber, J. Czernin, H. C. Kolb*

From In Situ to In Vivo: An In Situ Click-Chemistry-Derived Carbonic Anhydrase II Imaging Agent for Positron Emission Tomography

CA II makes a good PET: Discovering positron emission tomography (PET) probes with high target affinities is challenging. PET probe discovery using in situ click chemistry uses ^{19}F -bearing fragments as ^{18}F surrogates. This ensures that the lead hits and PET probes have equivalent chemical or biological characteristics, making PET probe discovery predictable and reliable.



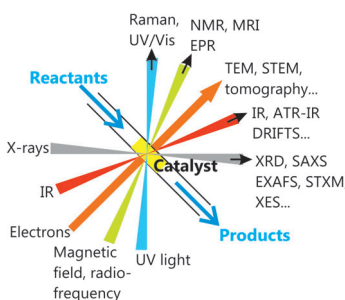
ChemSusChem
DOI: 10.1002/cssc.201200795

Renewable Resources

J. He, Y. Zhang, E. Y.-X. Chen*

Chromium(0) Nanoparticles as Effective Catalyst for the Conversion of Glucose into 5-Hydroxymethylfurfural

It's nano: Small and uniform chromium nanoparticles, either pre-formed or generated in situ, effectively catalyze the conversion of glucose into 5-hydroxymethyl furfural. The results compare favorably with those achieved by using a catalyst system based on divalent CrCl_2 in ionic liquids (ILs). In addition, the chromium nanoparticles are found in the CrCl_2/IL system, and the implications of their presence in that system is investigated.



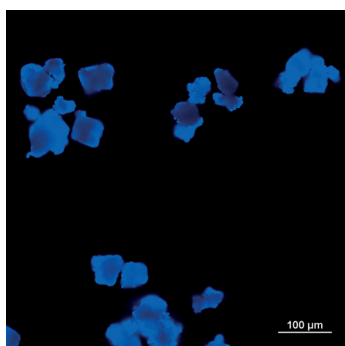
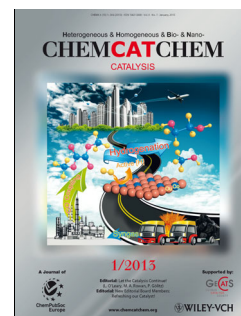
ChemCatChem
DOI: 10.1002/cctc.201200356

Imaging Catalysts

J.-D. Grunwaldt,* J. B. Wagner, R. E. Dunin-Borkowski

Imaging Catalysts at Work: A Hierarchical Approach from the Macro- to the Meso- and Nano-scale

Zoom in on catalysis: Characterization techniques that have traditionally provided "global" atomic scale information about catalysts are being developed to provide the same information on a more local scale, often with sub-second time resolution under close-to-realistic reaction conditions. We compare the complementary techniques that are presently available, including environmental transmission electron microscopy, and discuss their limitations and future prospects.



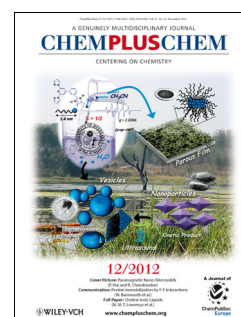
ChemPlusChem
DOI: 10.1002/cplu.201200245

Host–Guest Systems

D. Yan,* G. O. Lloyd,* A. Delori, W. Jones, X. Duan

Tuning Fluorescent Molecules by Inclusion in a Metal–Organic Framework: An Experimental and Computational Study

Fluorescent materials: Two linear π -conjugated fluorescent molecules, 1,4-bis-*p*-cyanostyrylbenzene and 1,4-bis(5-phenyloxazol-2-yl)benzene, have been incorporated into a metal–organic framework system, which show tunable fluorescence characteristics (see figure).



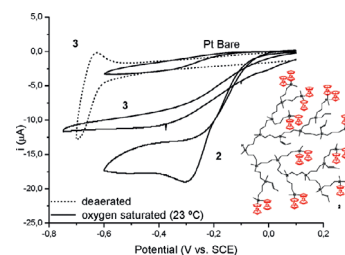


Ferrocenyl Polymer Electrocatalysis

G. de la Cruz, H. Schüle, J. Losada,* M. P. García-Armada, H. Frey, B. Alonso, C. M. Casado*

Electrocatalytic Properties of Carbosilane-Based Hyperbranched Polymers Functionalized with Interacting Ferrocenyl Units

Redox active hyperbranched polycarbosilanes functionalized with diferrocenylmethylsilane have been prepared and electrochemically characterized both in solution and electrodeposited onto electrode surfaces. Their electrocatalytic activity in the reduction of oxygen as well as in the electrochemical reduction and oxidation of hydrogen peroxide is reported.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201201018

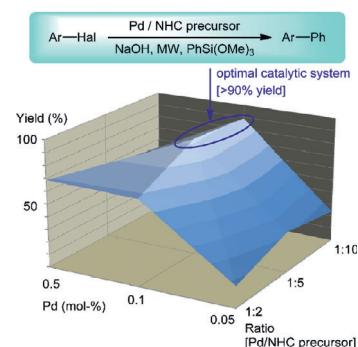


Carbene Ligands

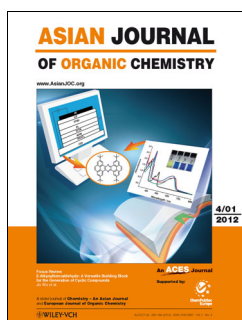
I. Peñafiel, I. M. Pastor,* M. Yus*

NHC-Ligand Effectiveness in the Fluorine-Free Hiyama Reaction of Aryl Halides

The optimal catalytic system for the fluorine-free Hiyama reaction involving palladium and an NHC-ligand precursor has been determined by adjusting the amount of palladium and the corresponding imidazolium salt. Various aryl bromides and chlorides have successfully been coupled by means of this methodology under microwave irradiation.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201201066



Inclusion Complexes

Y. Takeda, T. Nagamachi, K. Nishikori, S. Minakata*

An Inclusion Complex of C₆₀ with Organosilylated γ -Cyclodextrin: Drastic Enhancement of Apparent Solubility of C₆₀ in Nonpolar and Weakly Polar Organic Solvents

What a solution! A bi-capped inclusion complex of C₆₀ with organosilylated γ -cyclodextrin that is highly soluble in nonpolar and weakly polar organic solvents, such as CHCl₃ or cyclohexane, was prepared and characterized. The complex facilitates the separation of C₆₀ from C₇₀ and selective functionalization of C₆₀. Furthermore, fabrication of a thin film of the complex by using a solution technique was demonstrated.



Asian J. Org. Chem.
DOI: 10.1002/ajoc.201200160



Chemistry Education

50 Years of Organikum – Amazing Impact of a Practical Course Book

The Organikum set out to revolutionize the teaching of practical organic chemistry with over 400000 copies of 23 German and 19 foreign-language editions sold. *ChemViews magazine* looks at the history of this unique book through the eyes of its authors and editors. 17 scientific assistants aged between 24 and 40 years, with solid experience in student education, developed the book 50 years ago. Some of them still serve as today's Editorial team.



ChemViews magazine
DOI: 10.1002/chemv.201200147