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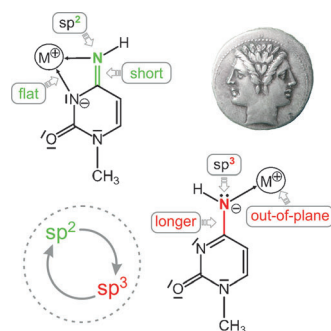


Nucleobase Amino Groups

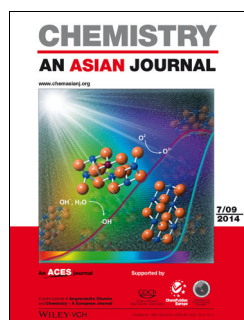
C. Fonseca Guerra,* P. J. Sanz Miguel,* A. Cebollada, F. M. Bickelhaupt,* B. Lippert*

Rationalizing the Structural Variability of the Exocyclic Amino Groups in Nucleobases and Their Metal Complexes: Cytosine and Adenine

Hybridization and structure of exocyclic amino groups of cytosine and adenine nucleobases can shift from sp^2 to sp^3 (see graphic) if an amino proton acts as a donor in a strong hydrogen-bonding interaction or if it is replaced by a monofunctionally bonded metal ion.



Chem. Eur. J.
DOI: 10.1002/chem.201403066

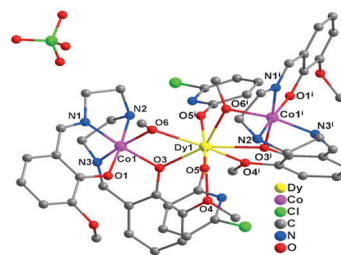


Cluster Compounds

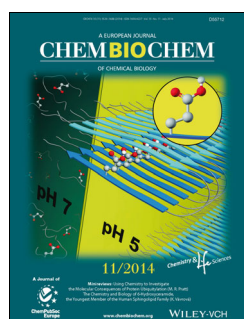
C.-M. Liu,* D.-Q. Zhang, X. Hao, D.-B. Zhu

Trinuclear $[Co^{III}_2-Ln^{III}]$ ($Ln = Tb, Dy$) Single-Ion Magnets with Mixed 6-Chloro-2-Hydroxypyridine and Schiff Base Ligands

SIM-ply the best! A new type of 3d–4f single-ion magnet (SIM) with a diamagnetic cobalt(III) ion as the 3d metal is constructed. The large steric hindrance of the cobalt(III) segments in the SIM minimize the number of intermolecular magnetic interactions, and because of the presence of mononuclear Ln^{III} magnetic systems, the magnetic anisotropy can be easily modified, which results in remarkable anisotropic barriers.



Chem. Asian J.
DOI: 10.1002/asia.201402001

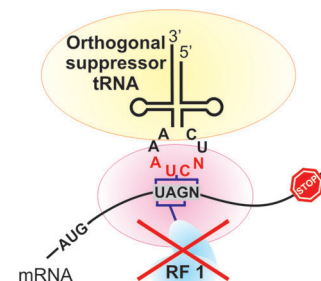


Genetic Code Expansion

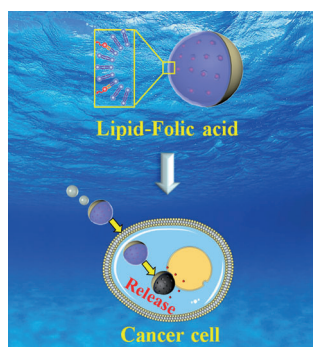
A. Chatterjee, M. J. Lajoie, H. Xiao, G. M. Church,* P. G. Schultz*

A Bacterial Strain with a Unique Quadruplet Codon Specifying Non-native Amino Acids

Not the usual: Incorporation of unnatural amino acids into proteins in response to quadruplet codons is inefficient, due to competing triplet recognition on the ribosome. Here we demonstrate a dramatic improvement in the suppression efficiency of the UAGA codon, when competing UAG recognition is eliminated by RF1 deletion in a genomically recoded *E. coli* strain devoid of endogenous UAG codons.



ChemBioChem
DOI: 10.1002/cbic.201402104



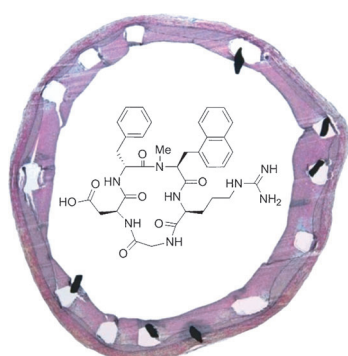
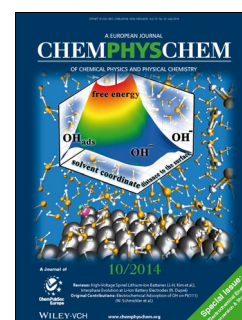
ChemPhysChem
DOI: 10.1002/cphc.201402111

Drug Delivery

M. Xuan, J. Shao, X. Lin, L. Dai,* Q. He*

Self-Propelled Janus Mesoporous Silica Nanomotors with Sub-100 nm Diameters for Drug Encapsulation and Delivery

Drugs in motion: Self-propelled Janus mesoporous silica nanomotors with diameters of sub-100 nm are presented. This new active delivery system combines an autonomous nanomotor and a smart cargo into an integrated system and may be helpful in dealing with current nano-particle drug-delivery system obstacles (see picture).



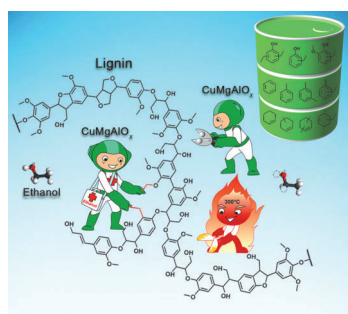
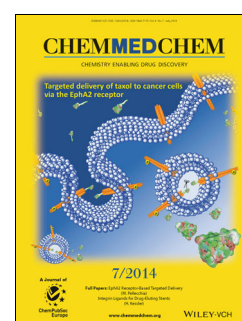
ChemMedChem
DOI: 10.1002/cmdc.201400078

Drug Delivery

F. Rechenmacher, K. Steigerwald, B. Laufer, S. Neubauer, T. G. Kapp, L. Li, C. Mas-Moruno, M. Jöner, H. Kessler*

The Integrin Ligand ϵ (RGDf(NMe)Nal) Reduces Neointimal Hyperplasia in a Polymer-Free Drug-Eluting Stent System

A bold stent team: The integrin ligand ϵ (RGDf(NMe)Nal) was developed for inhibition of smooth muscle cell proliferation after being released from a polymer-free drug-eluting stent system. The peptide successfully reduced in-stent restenosis in an in vivo rabbit iliac artery model in the absence of delayed vascular healing.



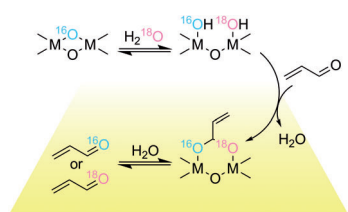
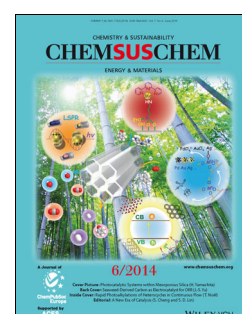
ChemSusChem
DOI: 10.1002/cssc.201402094

Renewable Resources

X. Huang, T. I. Korányi, M. D. Boot, E. J. M. Hensen*

Catalytic Depolymerization of Lignin in Supercritical Ethanol

Good cop, good cop: Valorization of lignin in supercritical ethanol using a copper-containing mixed oxide results in high monomer yield (23 wt%) without char formation. Aromatics are the main products and almost half of this monomer fraction is free of oxygen. Ethanol acts as hydrogen-donor solvent as well as capping agent, stabilizing through C- and O-alkylation the highly reactive phenolic intermediates and suppressing repolymerization reactions.



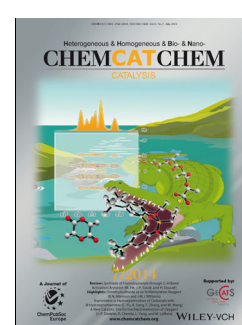
ChemCatChem
DOI: 10.1002/cctc.201400099

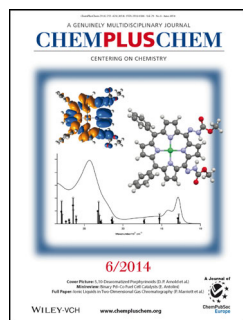
Selective Oxidation

T. Petzold, N. Blickhan, A. Drochner, H. Vogel*

The Effect of Water on the Heterogeneously Catalyzed Selective Oxidation of Acrolein: An Isotope Study

A wisdom mix: The effect of water on the partial oxidation of acrolein on Mo/V/W mixed oxides is studied. The incorporation of oxygen originating from water into acrolein and oxidation products is investigated by performing isotope exchange experiments.



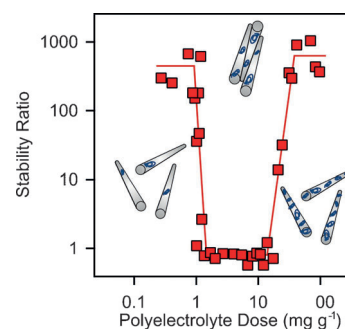


Titanate Nanowire Colloids

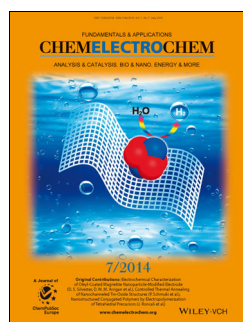
E. Horváth, L. Grebikova, P. Maroni, T. Szabó, A. Magrez, L. Forró, I. Szilagyi*

Dispersion Characteristics and Aggregation in Titanate Nanowire Colloids

Dispersion stabilization: Charging and aggregation in aqueous dispersions of positive titanate nanowires can be tuned through the addition of the oppositely charged poly(styrene sulfonate) polyelectrolyte thanks to its strong affinity for the titanate surface. Accordingly, the system is stable at low polyelectrolyte doses, unstable with rapid aggregation of the nanowires near the charge neutralization point, and stable again at high polyelectrolyte coverages, as shown in the picture.



ChemPlusChem
DOI: 10.1002/cplu.201300426

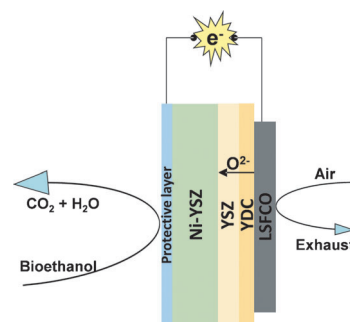


Solid-Oxide Fuel Cells

M. Lo Faro,* R. M. Reis, G. G. A. Saglietti, A. G. Sato, E. A. Ticianelli, S. C. Zignani, A. S. Aricò

Nickel-Copper/Gadolinium-Doped Ceria (CGO) Composite Electrocatalyst as a Protective Layer for a Solid-Oxide Fuel Cell Anode Fed with Ethanol

Shielded: A nickel-copper alloy is mixed with gadolinium-doped ceria to obtain an anode-supported solid-oxide fuel cell (AS-SOFC) modified with a protective layer coated on the anode (see picture; YSZ = $\text{Y}_{0.08}\text{Zr}_{0.92}\text{O}_2$, YDC = $\text{Y}_{0.10}\text{Ce}_{0.90}\text{O}_2$, LSCFO = $\text{La}_{0.6}\text{Sr}_{0.4}\text{Fe}_{0.8}\text{Co}_{0.2}\text{O}_3$). A comparative study between the modified cell and a conventional AS-SOFC without the protective layer is performed.



ChemElectroChem
DOI: 10.1002/celec.201402017

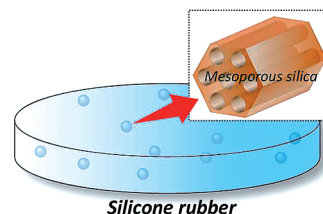


Mesoporous Silica

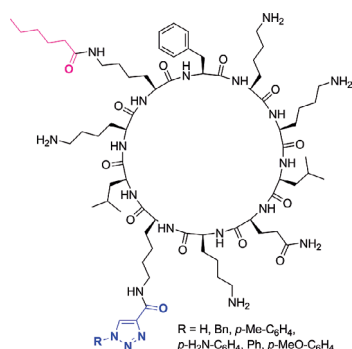
N. Suzuki, Y. Kamachi, K. Takai, S. Kiba, Y. Sakka, N. Miyamoto, Y. Yamauchi*

Effective Use of Mesoporous Silica Filler: Comparative Study on Thermal Stability and Transparency of Silicone Rubbers Loaded with Various Kinds of Silica Particles

A systematic study was conducted on the thermal strength and transparency of four types of silica/silicone composites to determine their effectiveness as filler materials for silicone rubber. Mesoporous silica/silicone composites show the lowest thermal expansion and higher transparency than the other composites, which makes them the most promising filler materials for silicone rubber.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201401615



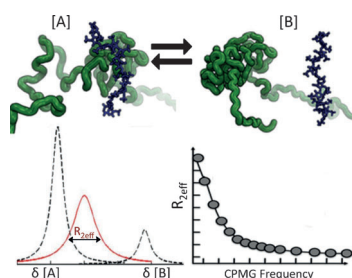
Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201402111

Lipopeptide Synthesis

S. Vilà, C. Camó, E. Figueras, E. Badosa, E. Montesinos, M. Planas,*
L. Feliu*

Solid-Phase Synthesis of Cyclic Lipopeptidotriazoles

An efficient methodology for the solid-phase synthesis of cyclic lipopeptidotriazoles involving the use of five orthogonal protecting groups has been established. This strategy has been used to prepare a set of derivatives of the antimicrobial cyclic peptide BPC194 in high purities.



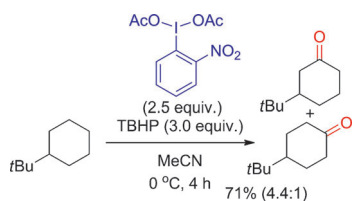
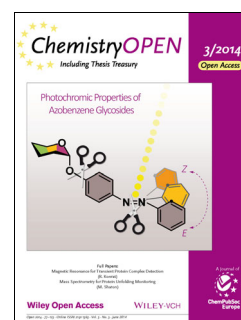
ChemistryOpen
DOI: 10.1002/open.201402008

Protein-Protein Interactions

T. Sára, T. C. Schwarz, D. Kurzbach, C. H. Wunderlich, C. Kreutz,
R. Konrat*

Magnetic Resonance Access to Transiently Formed Protein Complexes

Observing the unobserved: Low-affinity protein–protein complexes of transiently interacting proteins are hallmarks of signaling cascades and of great relevance in biology. We show how novel NMR and EPR techniques can be used for characterizing weak protein–protein complexes and their potential to study hitherto unobserved higher-order structures of proteins.



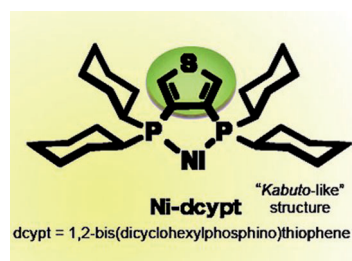
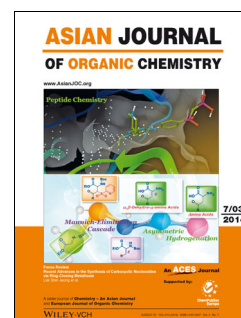
Asian J. Org. Chem.
DOI: 10.1002/ajoc.201402087

Cluster Compounds

S. A. Moteki, S. Selvakumar, T. Zhang, A. Usui, K. Maruoka*

A Practical Approach for the Oxidation of Unactivated C_{sp3}–H Bonds with *o*-Nitro(diacetoxyiodo)benzene as an Efficient Hypervalent Iodine(III)-Based Oxidizing Agent

A bit hyper: A practical approach for the oxidation of unactivated C_{sp3}–H bonds by *o*-nitro(diacetoxyiodo)benzene is presented. The nitro group coordinates to the adjacent iodine center through dipolar interaction, which leads to a single substitution of the acetate ligand by *tert*-butyl hydroperoxide (TBHP). As a result, a strong iodanyl radical is formed, which can activate the inert C_{sp3}–H bonds in a highly efficient manner.



ChemViews magazine
DOI: 10.1002/chemv.201400046

Homogeneous Catalysis

D. Bradley

A Catalyst Worthy of a Samurai

α -Arylketone compounds constitute the framework of many pharmaceuticals and organic materials and can be synthesized by a cross-coupling reaction between carbonyl compounds and phenol derivatives. D. Bradley discusses a recent article by J. Yamaguchi and K. Itami, Japan, in which they describe the development of a new low-cost nickel catalyst to synthesize a variety of α -arylketones.

