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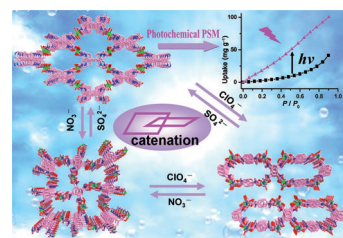


Porous Frameworks

J.-K. Sun, B. Tan, L.-X. Cai, R.-P. Chen, J. Zhang, J. Zhang*

Polycatenation-Driven Self-Assembly of Nanoporous Frameworks Based on a 1D Ribbon of Rings: Regular Structural Evolution, Interpenetration, Transformation, and Photochemical Modification

Polycatenation approach: Unique example of polycatenation-driven assembly of porous frameworks with fine-tuning pore metrics as well as the structural transformation between the interpenetrated frameworks has been developed. Furthermore, the introduction of photochemical modification has made a great impact on the porous structure as well as adsorption performance.



Chem. Eur. J.
DOI: 10.1002/chem.201303700

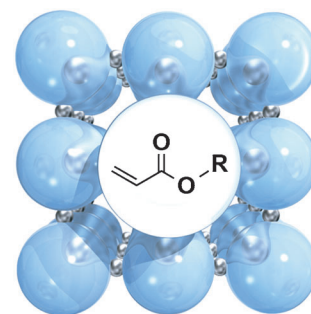


Nanocapsules

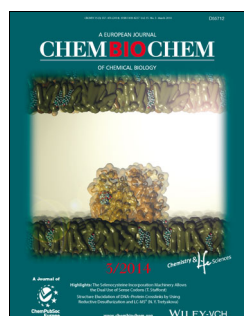
G.-H. Ning, Y. Inokuma, M. Fujita*

Stable Encapsulation of Acrylate Esters in Networked Molecular Capsules

Guests are welcome: Reactive acrylate esters were encapsulated in the cavity of networked molecular capsules in a single-crystal-to-single-crystal fashion. Owing to the encapsulation effect, acrylates inside the capsules do not undergo polymerization upon irradiation with UV light or heating, while the guest molecules can be quantitatively extracted by treatment with toluene.



Chem. Asian J.
DOI: 10.1002/asia.201301298

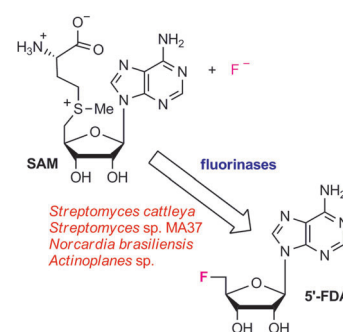


Fluorinases

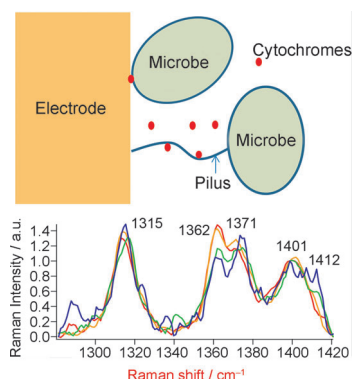
H. Deng,* L. Ma, N. Bandaranayaka, Z. Qin, G. Mann, K. Kyeremeh, Y. Yu, T. Shepherd, J. H. Naismith, D. O'Hagan*

Identification of Fluorinases from *Streptomyces* sp MA37, *Norcardia brasiliensis*, and *Actinoplanes* sp N902-109 by Genome Mining

Get on the fluor! The fluorinase enzyme from *Streptomyces cattleya* was identified in 2002 as the only fluorination enzyme known in biochemistry. Three additional fluorinases expressed through bacterial genome mining are now reported. These new fluorinases extend the range of genes available for developing fluorination biotechnology.



ChemBioChem
DOI: 10.1002/cbic.201300732



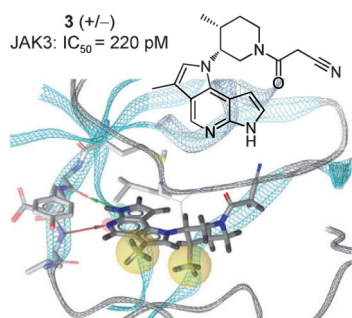
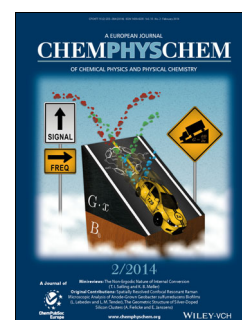
ChemPhysChem
DOI: 10.1002/cphc.201300984

Biofilms

N. Lebedev,* S. M. Strycharz-Claven, L. M. Tender*

Spatially Resolved Confocal Resonant Raman Microscopic Analysis of Anode-Grown *Geobacter sulfurreducens* Biofilms

Confocal resonance Raman microscopy is applied to study anode-grown *Geobacter sulfurreducens* biofilms with spatial resolution. The results confirm the existence of an intra-biofilm redox gradient, which is required to drive electron transport toward the anode surface by electron hopping via cytochromes.



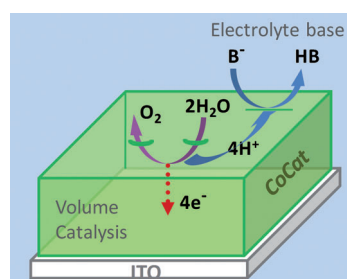
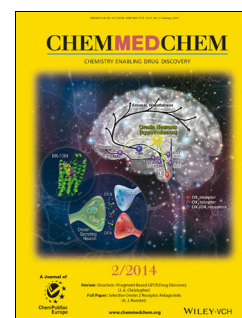
ChemMedChem
DOI: 10.1002/cmdc.201300520

Drug Design

M. Gehring, E. Pfaffenrot, S. Bauer, S. A. Laufer*

Design and Synthesis of Tricyclic JAK3 Inhibitors with Picomolar Affinities as Novel Molecular Probes

Freeze it! Janus kinase (JAK) inhibitors are currently a hot topic in medicinal chemistry, but isoform selectivity amongst the four JAK family members remains a major issue. By applying a “frozen analogue” approach to the current gold standard pan-JAK inhibitor tofacitinib, extremely potent inhibitors with selectivity for JAK3 and intracellular activity were developed. These compounds may serve as tools and probes for pharmacodynamics studies.



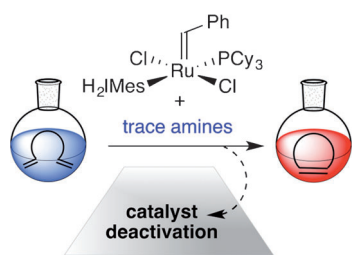
ChemSusChem
DOI: 10.1002/cssc.201301019

Water Oxidation

K. Klingan, F. Ringleb, I. Zaharieva, J. Heidkamp, P. Chernev, D. Gonzalez-Flores, M. Risch, A. Fischer, H. Dau*

Water Oxidation by Amorphous Cobalt-Based Oxides: Volume Activity and Proton Transfer to Electrolyte Bases

It's what's inside that counts! Amorphous oxides are a high-interest material class in energy science. Rather than at the outer surface, catalysis of water oxidation by an amorphous cobalt oxide takes place inside the hydrated oxide material. Unprotonated buffer molecules of the electrolyte solution are likely to pick up protons at the surface of the catalyst material (see picture).



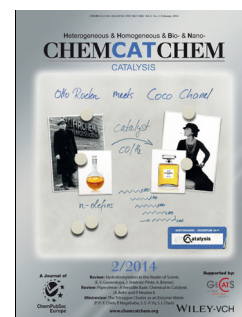
ChemCatChem
DOI: 10.1002/cctc.201300861

Grubbs Catalyst

J. A. M. Lummiss, B. J. Ireland, J. M. Sommers, D. E. Fogg*

Amine-Mediated Degradation in Olefin Metathesis Reactions that Employ the Second-Generation Grubbs Catalyst

Achilles' Heels: Amine-mediated decomposition during ring-closing metathesis reactions that employ the Grubbs II catalyst is studied. For most amines, the dominant deactivation pathway involves attack on the resting-state methylidene complex. In an exception to this rule, highly basic 1,8-diazabicyclo[5.4.0]undec-7-ene is found to preferentially attack the metallacyclobutane. Cy = cyclohexyl, H₂Mes = 1,3-dimesityl-4,5-dihydroimidazol-2-ylidene.



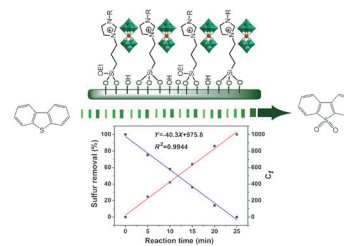


Desulfurization

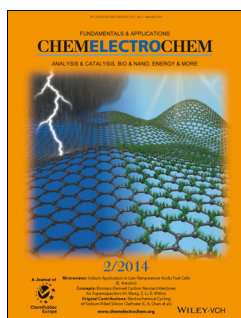
Y. Chen, Y.-F. Song*

Immobilization of LaW₁₀ onto Ionic-Liquid-Modified Mesoporous Silica: Deep Desulfurization with Zero-Order Reaction Kinetics

The immobilization of LaW₁₀ onto ionic-liquid (IL)-modified mesoporous silica results in a new heterogeneous catalyst, LaW₁₀/IL-SiO₂, which can achieve the deep desulfurization of dibenzothiophene, benzothiophene, and 4,6-dimethyldibenzothiophene under mild conditions (see figure). The extractive catalytic oxidative desulfurization process with LaW₁₀/IL-SiO₂ does not require addition of the IL with each catalyst reuse.



ChemPlusChem
DOI: 10.1002/cplu.201300323

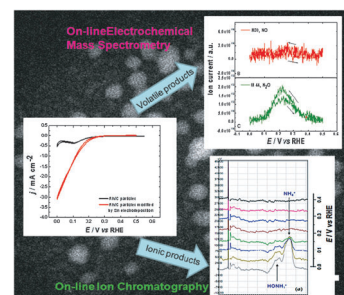


Modified Nanoparticles

Wilai Siriwatcharapiboon, Youngkook Kwon, Jian Yang, Ruth L. Chantry, Ziyou Li, Sarah L. Horswell,* Marc T. M. Koper*

Promotion Effects of Sn on the Electrocatalytic Reduction of Nitrate at Rh Nanoparticles

Rh nanoparticles on a carbon support are prepared for electrochemical nitrate reduction. Online electrochemical mass spectrometry and ion chromatography are applied to analyze volatile and ionic products during the reaction. Sn modification of Rh changes both the activity and selectivity of the reaction, similar to the effects of Sn modification on Pt.



ChemElectroChem
DOI: 10.1002/celc.201300135

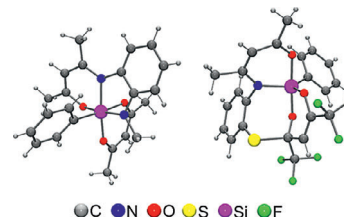


Hexacoordinate Silicon

J. Weiß, K. Sinner, J. A. Baus, C. Burschka, R. Tacke*

Neutral Hexacoordinate Silicon(IV) Complexes with a SiO₄NC or SiO₃N₂C Skeleton and Neutral Pentacoordinate Silicon(IV) Complexes Containing a Trianionic Tetradentate O,N,O,O Ligand

A series of hexacoordinate silicon(IV) complexes and two pentacoordinate silicon(IV) complexes was synthesized and structurally characterized. The hexacoordinate compounds contain a tridentate dianionic O,N,O or N,N,O ligand, a phenyl ligand, and a symmetrically substituted acetylacetonato ligand of the type RC(O)–CH=C(OSiMe₃)R (R = Me, Ph, CF₃). The pentacoordinate complexes contain a tetradentate trianionic O,N,O,O ligand and a phenyl ligand.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201301185

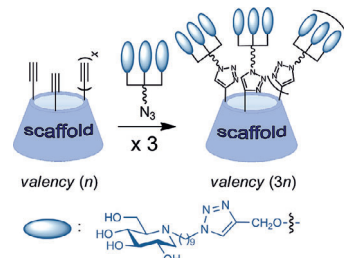


Multivalent Iminosugars

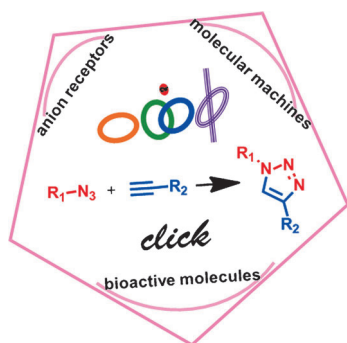
A. Joosten, J. P. Schneider, M. L. Lepage, C. Tarnus, A. Bodlenner, P. Compain*

A Convergent Strategy for the Synthesis of Second-Generation Iminosugar Clusters Using "Clickable" Trivalent Dendrons

A convergent route to unprecedented neoglycoclusters containing up to 21 peripheral iminosugar ligands is reported. The synthetic strategy involves the grafting of azide-armed trivalent dendrons onto polyalkyne "clickable" scaffolds by Cu^I-catalysed azide-alkyne cycloadditions.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201301583



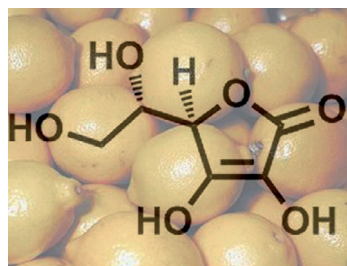
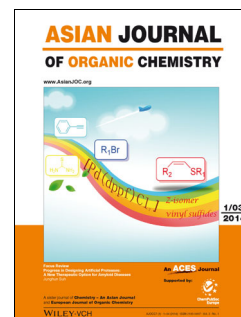
Asian J. Org. Chem.
DOI: 10.1002/ajoc.201300245

Click Chemistry

L. Xu, Y. Li,* Y. Li*

Application of "Click" Chemistry to the Construction of Supramolecular Functional Systems

Click! The click reaction forms 1,4-disubstituted 1,2,3-triazoles regioselectively. By incorporating a CH hydrogen-bond donor these triazoles can be used as anion receptors, and with their atom arrangement and electronic properties similar to those of a peptide bond, they can be used in the synthesis of bioactive macrocycles. Because of the unique mode of cyclization and recognition sites, they can also be used in the construction of molecular machines.



ChemViews magazine
DOI: 10.1002/chemv.201300134

Vitamin C

K. Roth, S. Streller

Vitamin C Deficiency

Professors Klaus Roth and Sabine Streller look into the history of scurvy, a disease that develops when our diets are deficient in vitamin C. They examine how various treatments for scurvy were discovered but then failed to become generally known. Reasons for this loss of knowledge include a lack of a functional scientific communication system, and the fact that it mostly only affected seamen.

