

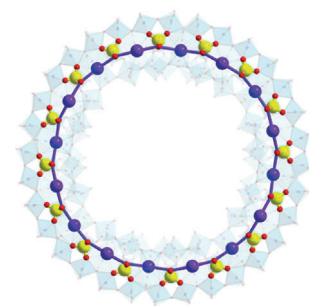


Chemical Adaptability

A. Müller,* A. Merca, A. J. M. Al-Karawi, S. Garai, H. Bögge, G. Hou, L. Wu, E. T. K. Haupt,* D. Rehder, F. Haso, T. Liu

Chemical Adaptability: The Integration of Different Kinds of Matter into Giant Molecular Metal Oxides

Integration without changing shape: $\{\text{Mo}_{11}\}_n$ ($n = 14, 16$)-type molybdenum oxide clusters allow integration of matter—without changing their wheel shapes—like cations and anions positioned at the same places as well as “salt-like” $\{\text{M}(\text{SO}_4)\}_{16}$ rings ($\text{M} = \text{K}, \text{NH}_4$) caused by unique flexible building block properties similar to those present in related dynamic libraries which lead to a variety of giant clusters.



Chem. Eur. J.
DOI: 10.1002/chem.201203186

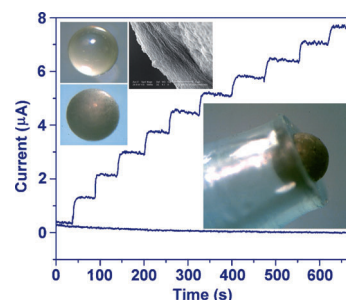


Electrochemical Sensing

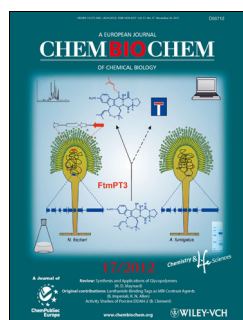
S. Sheng, S. Liu, L. Zhang, G. Chen*

Facile Assembly of Graphene on Anion Exchange Resin Microspheres for Electrochemical Sensing and Biosensing

Ac in the hole: Graphene sheets were assembled on anion exchange resin (AER) microspheres based on the electrostatic interactions between graphene oxide and AER and subsequent chemical reduction. The prepared graphene-coated AER microspheres were then embedded in the bores of pipette tips to fabricate disposable electrodes and biosensors for sensing of biologically active substances.



Chem. Asian J.
DOI: 10.1002/asia.201200745

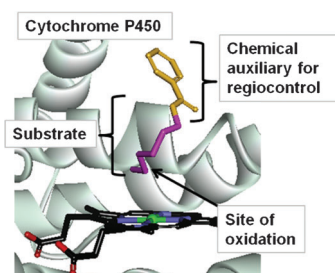


Cytochromes

A. Ménard, C. Fabra, Y. Huang, K. Auclair*

Type II Ligands as Chemical Auxiliaries To Favor Enzymatic Transformations by P450 2E1

Controlling P450 transformations: Type II ligands contain an aromatic nitrogen that coordinates to the heme iron in the active site of cytochrome P450 enzymes. The type II ligand nicotinate can serve as a useful chemical auxiliary for biocatalysis with P450 2E1 by promoting the predictable oxidation of small hydrocarbon substrates.



ChemBioChem
DOI: 10.1002/cbic.201200524

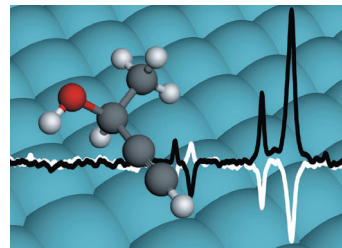


Circular Dichroism

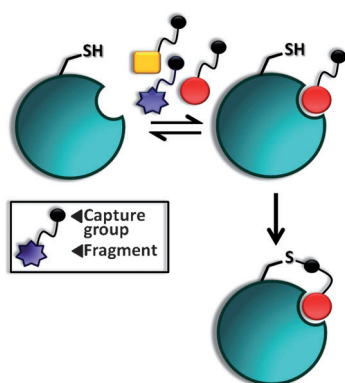
C. Merten, Y. Xu*

Matrix Isolation-Vibrational Circular Dichroism Spectroscopy of 3-Butyn-2-ol and its Binary Aggregates

Good vibrations: Good mirror-image matrix isolation-vibrational circular dichroism (MI-VCD) spectra of the two enantiomers of 3-butyn-2-ol are achieved in low-temperature matrices (see picture). The well-resolved experimental MI-VCD bands provide the essential mean to assign associated vibrational absorption spectral features correctly. By varying the matrix temperature, it is possible to follow the self-aggregation of the chiral alcohol.



ChemPhysChem
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ChemMedChem

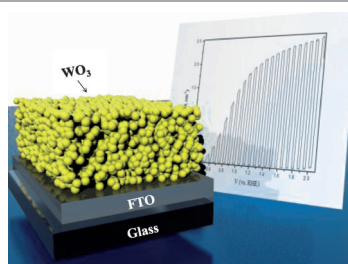
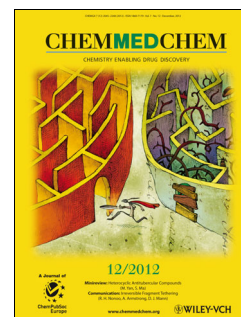
DOI: 10.1002/cmdc.201200404

Fragment-Based Drug Design

R. H. Nonoo, A. Armstrong,* D. J. Mann*

Kinetic Template-Guided Tethering of Fragments

Birds of a tether: A tethering strategy for the site-directed discovery of low-molecular-weight fragments that bind weakly to defined protein surfaces is described. A solvent-exposed protein thiol captures acrylamide-modified fragments in a conjugate addition reaction that requires a template to produce a measureable quantity of protein–fragment adduct, which can be rapidly identified by mass spectrometry.



ChemSusChem

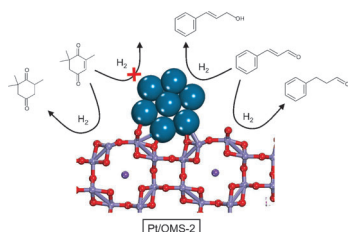
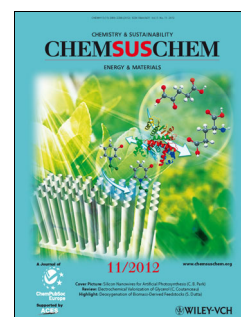
DOI: 10.1002/cssc.201200484

Water Splitting

R. H. Gonçalves,* L. D. T. Leite, E. R. Leite*

Colloidal WO₃ Nanowires as a Versatile Route to Prepare a Photoanode for Solar Water Splitting

Wired for success: We describe a synthetic method to produce WO₃ nanowires as photoanodes through colloidal nanowire deposition. Among the several nanowires synthesized in non-hydrolytic media, orthorhombic WO₃·H₂O nanowires show the best performance as photoanode and also good photocurrent stability during long-term analysis. Structural and photoelectrochemical characterization shows the importance of nanostructural features in WO₃ photoanode performance.



ChemCatChem

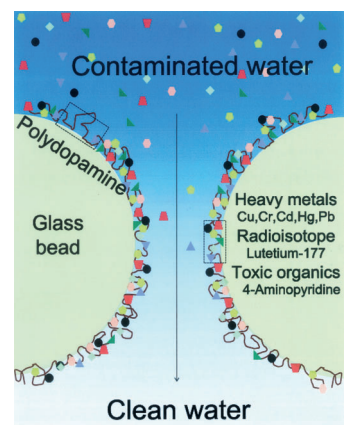
DOI: 10.1002/cctc.201200447

Hydrogenation

H. G. Manyar, B. Yang, H. Daly, H. Moor, S. McMonagle, Y. Tao, G. D. Yadav, A. Goguet, P. Hu, C. Hardacre*

Selective Hydrogenation of α,β -Unsaturated Aldehydes and Ketones using Novel Manganese Oxide and Platinum Supported on Manganese Oxide Octahedral Molecular Sieves as Catalysts

The name's Bond, Double Bond: Selective hydrogenation of ketoisophorone and cinnamaldehyde as desired either at C=C or C=O double bond was achieved using manganese oxide octahedral molecular sieves (OMS-2) and platinum supported on OMS-2 catalysts.



ChemPlusChem

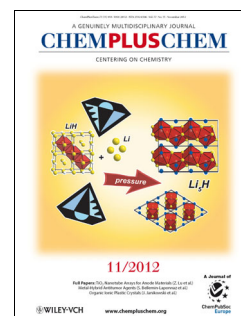
DOI: 10.1002/cplu.201200209

Water Detoxification

M. Lee, J. Rho, D.-E. Lee, S. Hong, S.-J. Choi, P. B. Messersmith,* H. Lee*

Water Detoxification by a Substrate-Bound Catecholamine Adsorbent

A bio-inspired approach for detoxification of water has been investigated. In this approach, three major classes of toxic agents, heavy-metal ions (Cr, Hg, Pb, Cu, and Cd), toxic organic species (4-aminopyridine), and a radioisotope (Lutetium-177) were effectively removed from contaminated water by polydopamine, a mussel-inspired adhesive catecholamine (see figure). In addition, this polydopamine filter was easily regenerated by treatment with acid or hydrogen peroxide.



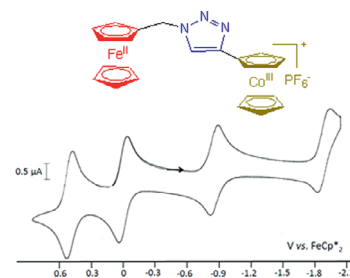


Click Reactions

A. Rapakousiou, C. Mouche, M. Dutte, J. Ruiz, D. Astruc*

Click Synthesis and Redox Chemistry of Mono- and Heterobimetallic Triazolyl and Triazolium-Ferrocene and Cobalticinium Complexes

The click syntheses (CuAAC) of triazole and access to triazolium derivatives containing ferrocene and/or cobalticinium allowed us to evaluate their redox chemistry by cyclic voltammetry and with the use of redox reagents.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.201200755

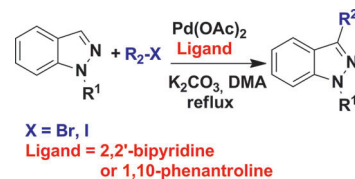


Arylation of Heterocycles

A. Ben-Yahia, M. Nass, S. El Kazzouli,* E. M. Essassi, G. Guillaumet*

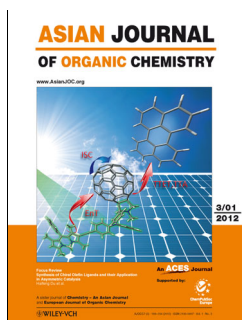
Direct C-3-Arylations of 1H-Indazoles

A new C-3 arylation method for 1H-indazoles was developed. Various C-3-arylated products were prepared using Pd(OAc)₂, 1,10-phenanthroline, and K₂CO₃ in refluxing DMA.



Eur. J. Org. Chem.

DOI: 10.1002/ejoc.201200860

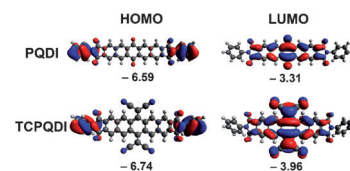


Tetracyanoquinodimethanes

T. Wu, J. Chen, Y. Guo, G. Yu, Z. Shuai, Y. Liu*

Synthesis and Characterization of N,N'-Substituted 15,15,16,16-Tetracyano-6,13-pentacenequinodimethane-2,3,9,10-tetracarboxylic Diimide Derivatives

How low can you go? N,N'-substituted 15,15,16,16-tetracyano-6,13-pentacenequinodimethane-2,3,9,10-tetracarboxylic diimide derivatives (TCPQDI-OC8 and TCPQDI-OC10) were prepared in the presence of Lehnert's reagent at room temperature in good yields from the corresponding quinones. The tetracarboxylic diimide units in TCPQDI derivatives increase the π delocalization and lead to low LUMO energy levels of less than -4.0 eV.



Asian J. Org. Chem.

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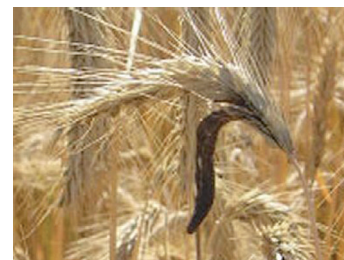


Alkaloids

Klaus Roth and Sabine Streller

A Chemical Examination of the Isenheim Altar: Role Played in History by Horned Rye (1)

The Isenheim Altar depicts the symptoms and treatment of "St. Anthony's Fire", a disease resulting from poisoning by ergot alkaloids in contaminated rye-bread. Klaus Roth and Sabine Streller, Berlin, Germany, examine in this first of three parts the disastrous influence that these alkaloids have had on human history.



ChemViews magazine

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