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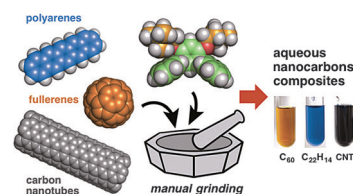


Nanocarbons

K. Kondo, M. Akita, T. Nakagawa, Y. Matsuo, M. Yoshizawa*

A V-Shaped Polyaromatic Amphiphile: Solubilization of Various Nanocarbons in Water and Enhanced Photostability

Encapsulation of nanocarbons: A new protocol is reported for solubilizing various nanocarbons, that is, fullerenes, polyarenes, and carbon nanotubes, in water through simple manual grinding with V-shaped polyaromatic amphiphiles. The obtained aqueous nanocomposites are composed of nanocarbons encircled by the polyaromatic shells of the amphiphiles through non-covalent aromatic-aromatic interactions.



Chem. Eur. J.
DOI: 10.1002/chem.201501414

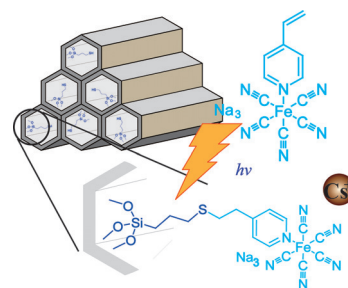


Adsorption

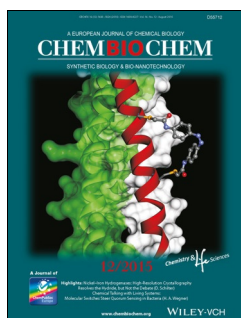
J. Qian, J. Ma, W. He, D. Hua*

Facile Synthesis of Prussian Blue Derivate-Modified Mesoporous Material via Photoinitiated Thiol–Ene Click Reaction for Cesium Adsorption

SBA-15 minutes of fame: A new strategy was developed to synthesize a functional mesoporous material by photo-initiated thiol–ene reaction under environmentally friendly conditions. The functional SBA-15 material shows a large adsorption capacity for Cesium ions.



Chem. Asian J.
DOI: 10.1002/asia.201500350

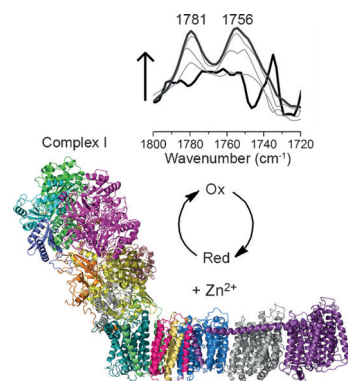


Membrane Proteins

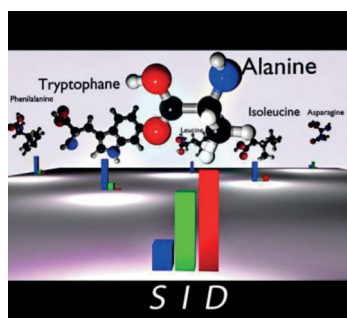
S. Kriegel, B. Srour, S. Steimle, T. Friedrich, P. Hellwig*

Involvement of Acidic Amino Acid Residues in Zn^{2+} Binding to Respiratory Complex I

Electrochemically induced FTIR difference spectra of the Zn^{2+} -inhibited NADH:ubiquinone oxidoreductase from *E. coli* reveal conformational changes and shifts of signals at very high wavenumbers (1781 and 1756 cm^{-1}). They point towards the perturbation of acidic residues in a highly hydrophobic environment, including D563 in the membrane arm.



ChemBioChem
DOI: 10.1002/cbic.201500273

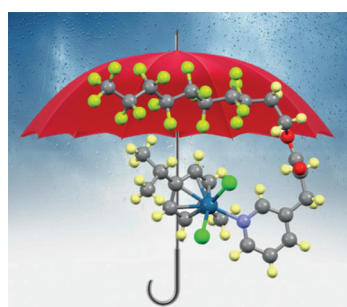
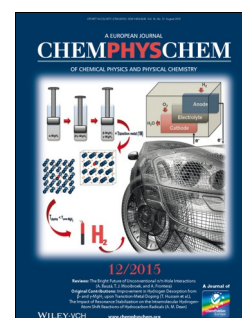


ChemPhysChem
DOI: 10.1002/cphc.201500282

Amino Acids

R. O. Esquivel,* M. Molina-Espíritu,* S. López-Rosa, C. Soriano-Correa, C. Barrientos-Salcedo, M. Kohout, J. S. Dehesa
Predominant Information Quality Scheme for the Essential Amino Acids: An Information-Theoretical Analysis

PIQued your interest? Shannon entropy (S), Fisher information (I) and disequilibrium (D) can be used to grasp the spatial spreading features of delocalizability, order and uniformity of electron density distributions of amino acids. The predominant quality scheme (PIQS) presented herein is used to recognize four major chemical families: aliphatic (delocalized), aromatic (delocalized), electro-attractive (narrowed) and tiny (uniform).



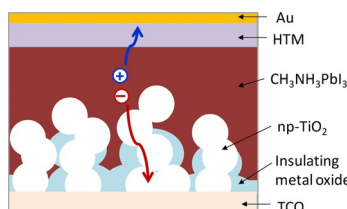
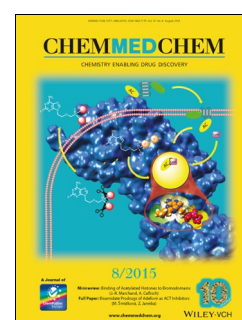
ChemMedChem
DOI: 10.1002/cmdc.201500221

Metals in Medicine

E. Păunescu, P. Nowak-Sliwinski, C. M. Clavel, R. Scopelliti, A. W. Griffioen, P. J. Dyson*

Anticancer Organometallic Osmium(II)-*p*-cymene Complexes

Prepare for a storm of osmium-based anticancer compounds, as osmium has emerged as a promising alternative to ruthenium in metallodrugs with the capacity to kill tumor cells. In this study bifunctional organometallic osmium(II)-*p*-cymene complexes functionalized with alkyl or perfluoroalkyl chains were screened for antiproliferative activity. Three compounds are highly cancer-cell-selective, and two were found to disrupt vascularization in vivo.



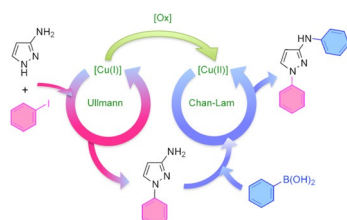
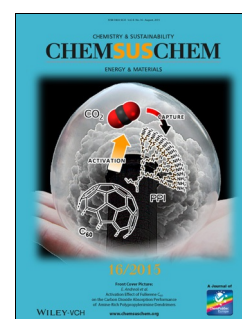
ChemSusChem
DOI: 10.1002/cssc.201500518

Perovskite Solar Cells

Y. Yue, X. Yang,* Y. Wu, N. T. Salim, A. Islam, T. Noda, L. Han*

Selective Deposition of Insulating Metal Oxide in Perovskite Solar Cells with Enhanced Device Performance

Isolating and conducting: A quasi-top-open insulating metal oxide overlayer is deposited on a nanoparticulate TiO₂ (np-TiO₂) layer for perovskite solar cells. This insulating hole-blocking layer mainly covers the bottom part of the mesoporous layer with less coverage at the top to keep sufficient electron conduction within the perovskite film. It effectively prevents charge recombination, giving rise to an open-circuit voltage that is higher for a cell without this layer.



One Pot, a single copper source !

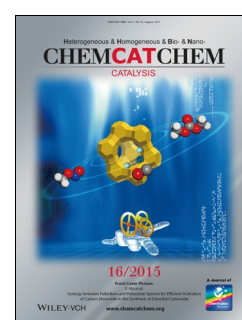
ChemCatChem
DOI: 10.1002/cctc.201500510

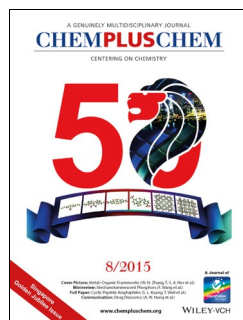
Tandem Catalysis

A. Beyer, T. Castanheiro, P. Busca,* G. Prestat*

Copper(I)/Copper(II)-Assisted Tandem Catalysis: The Case Study of Ullmann/Chan–Evans–Lam N¹,N³-Diarylation of 3-Aminopyrazole

Tandem power: The first assisted tandem copper-catalyzed process, triggered by a change in the oxidation state of the metal, is developed to allow a one-pot Ullman/Chan–Evans–Lam sequence leading to the selective N¹,N³-diarylation of 3-aminopyrazole.



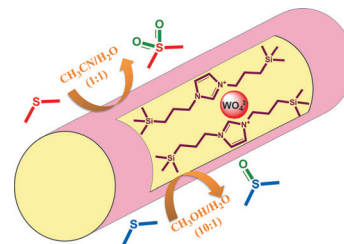


Supported Catalysis

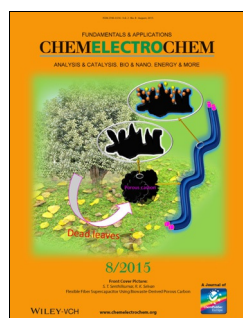
B. Karimi,* M. Khorasani, F. Bakhshandeh Rostami, D. Elhamifar, H. Vali

Tungstate Supported on Periodic Mesoporous Organosilica with Imidazolium Framework as an Efficient and Recyclable Catalyst for the Selective Oxidation of Sulfides

Interior design: The tungstate ion supported on periodic mesoporous organosilica with an ionic-liquid framework (see figure) has been used as an efficient and recoverable catalyst in the selective oxidation of organic sulfides into the related sulfoxides or sulfones, according to the choice of reaction solvent. The use of 30% H_2O_2 as a green oxidant was also achieved.



ChemPlusChem
DOI: 10.1002/cplu.201500010

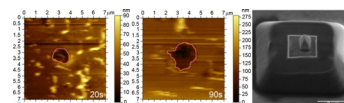


Localized Corrosion

J. Izquierdo, A. Eifert, C. Kranz,* R. M. Souto*

In Situ Monitoring of Pit Nucleation and Growth at an Iron Passive Oxide Layer by using Combined Atomic Force and Scanning Electrochemical Microscopy

In the pits: Localized corrosion processes remain one of the most difficult objects to comprehensively characterize in situ. The concept of combined atomic force and scanning electrochemical microscopies is employed to simultaneously generate and visualize the early stages of pit nucleation and propagation on apparently homogeneous passive metal surfaces.



ChemElectroChem
DOI: 10.1002/celc.201500100

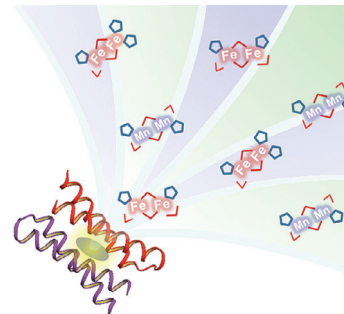


Artificial Enzymes

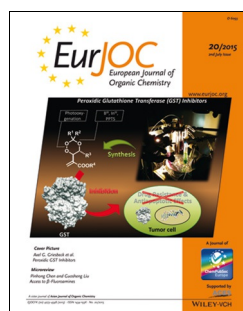
M. Chino, O. Maglio, F. Natri, V. Pavone, W. F. DeGrado, A. Lombardi*

Artificial Diiron Enzymes with a De Novo Designed Four-Helix Bundle Structure

The de novo design of nature-inspired four-helix bundle metalloproteins is discussed. Special attention is given to the rational refinement of structure/function in diiron-oxo protein models from the due ferri family, which has allowed a shift from structural to functional models.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201500470

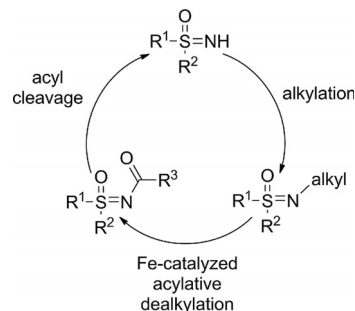


Iron-Catalyzed Dealkylation

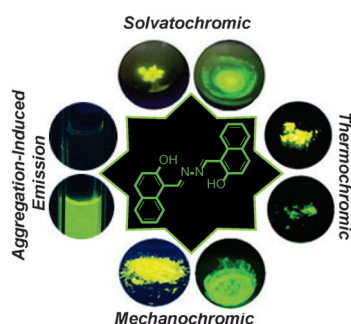
P. Lamers, D. L. Priebbenow, C. Bolm*

Iron-Catalyzed Acylative Dealkylation of *N*-Alkylsulfoximines

The dealkylation of *N*-alkylsulfoximines has been developed utilizing TBHP as oxidant and a catalytic amount of iron chloride to furnish a range of *N*-acyl- and *N*-aroylsulfoximines. This method facilitates the use of *N*-alkyl protecting groups that provide very stable *N*-protected sulfoximine derivatives that can be readily modified at sites other than the nitrogen atom.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201500855



ChemistryOpen

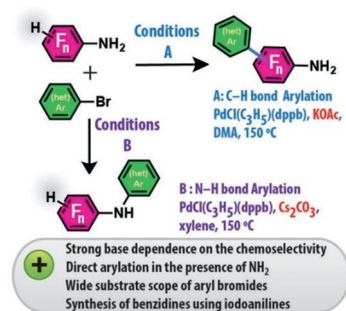
DOI: 10.1002/open.201500016

Multistimuli-Responsive Materials

X. Yao, J.-X. Ru, C. Xu, Y.-M. Liu, W. Dou, X.-L. Tang, G.-L. Zhang,* W.-S. Liu*

Multistimuli-Responsive Luminescence of Naphthalazine Based on Aggregation-Induced Emission

Grind and make it hot! A remarkable change in the fluorescence emission of 2,2-dihydroxy-1,1-naphthalazine occurs upon mechanical grinding, heating, and exposure to solvents. Its characteristic aggregation-induced emission (AIE) properties are reported herein. The fluorescence change could be a result of a transition between two structurally different polymorphs. This compound could have applications as a multistimuli-responsive luminescent material.



Asian J. Org. Chem.

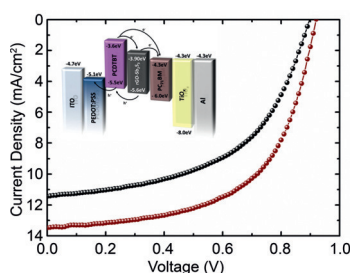
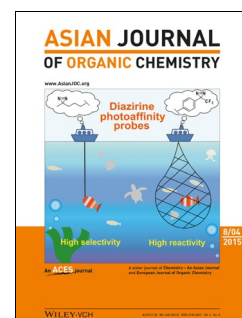
DOI: 10.1002/ajoc.201500268

Polyfluoroanilines

A. Takfaoui, R. Touzani,* J.-F. Soulé, P. H. Dixneuf, H. Doucet*

Palladium-Catalysed Direct Arylation using Free-Amine-Substituted Polyfluoroanilines with Inhibition of Amination-Type Reaction

Not very aminated: Conditions for the palladium-catalysed C–C bond formation via direct arylation of free-amine-substituted polyfluoroaniline derivatives without C–N bond formation are reported. The reaction proceeds in moderate to high yields with a variety of aryl bromides.



ChemNanoMat

DOI: 10.1002/cnma.201500044

Photovoltaics

N. Balis, D. Konios, E. Stratakis, E. Kymakis*

Ternary Organic Solar Cells with Reduced Graphene Oxide–Sb₂S₃ Hybrid Nanosheets as the Cascade Material

Hybrid composites: The synthesis and utilization of reduced graphene oxide–antimony sulfide (rGO–Sb₂S₃) hybrid nanosheets as the cascade material in ternary organic solar cells is demonstrated. Its utilization in PCDTBT:PC₇₁BM blend leads to a power conversion efficiency of 6.81 %, a value 23 % higher than the efficiency of the binary devices without rGO–Sb₂S₃.



ChemViews magazine

DOI: 10.1002/chemv.201500061

Energy

C. Goedecke

Hydrogen Storage under Ambient Conditions

What if hydrogen could be safely stored and transported in liquid form, just like Diesel fuel? Daniel Teichmann, CEO of the start-up Hydrogenious Technologies, talks about their Liquid Organic Hydrogen Carrier technology, describes the challenges of starting your own company, and gives advice for founders from an academic background.

