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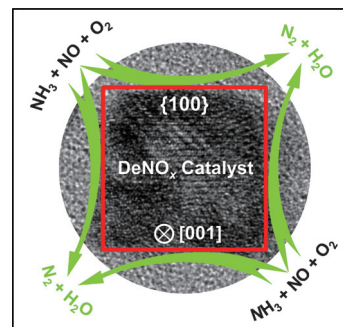


Heterogeneous Catalysis

P. Hu, M. E. Schuster, Z. Huang, F. Xu, S. Jin, Y. Chen, W. Hua, D. S. Su, X. Tang*

The Active Sites of a Rod-Shaped Hollandite DeNO_x Catalyst

There by the grace of rod: The active site of selective catalytic reduction of nitrogen oxides by ammonia over a rod-shaped hollandite manganese oxide (HMO) is accurately identified by using a combination of experimental evidence from bulk, surface-sensitive, and imaging methods in conjunction with reactivity studies, which is located on the {100} side facet of the HMO rod and consists of surface lattice oxygen assembly with a semi-tunnel structure.



Chem. Eur. J.
DOI: 10.1002/chem.201501084

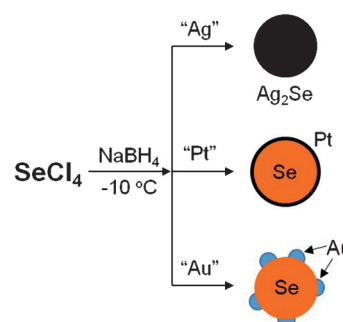


Nanoparticles

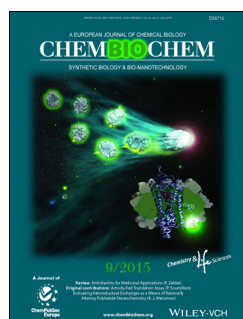
S. H. Park, J. Y. Choi, Y. H. Lee, J. T. Park,* H. Song*

Formation of Metal Selenide and Metal–Selenium Nanoparticles using Distinct Reactivity between Selenium and Noble Metals

Size does matter: Small Se nanoparticles with a diameter of ≈ 20 nm, generated by the reduction of SeCl₄ with NaBH₄ at low temperature, were used as a versatile platform for the synthesis of metal selenide and metal–selenium hybrid nanoparticles by treatment with noble metals, including Ag, Pt, and Au.



Chem. Asian J.
DOI: 10.1002/asia.201500191

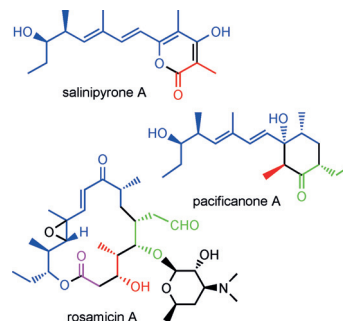


Natural Products

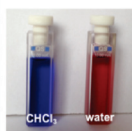
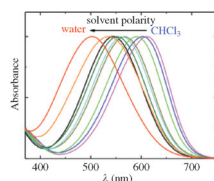
T. Awakawa, M. Crüsemann, J. Mungaia, N. Ziemert, V. Nizet, W. Fenical, B. S. Moore*

Salinipyron and Pacificanone Are Biosynthetic By-products of the Rosamicin Polyketide Synthase

Bifurcated polyketide synthesis: Salinipyrones and pacificanones are structurally related polyketides from *Salinispora pacifica* CNS-237. Mutagenesis experiments correlated their biosyntheses to the rosamicin octamodule PKS. This bifurcated polyketide pathway illuminates a series of enzymatic domain- and module-skipping reactions that give rise to polyketide product diversity.



ChemBioChem
DOI: 10.1002/cbic.201500177



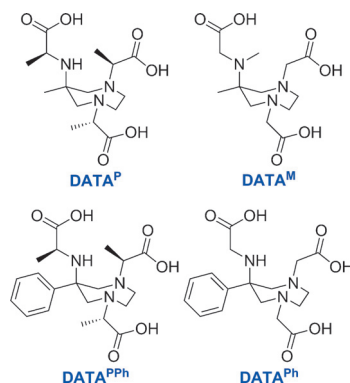
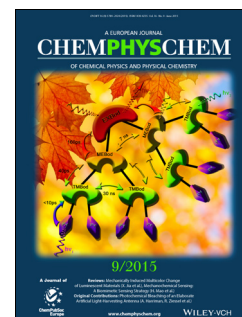
ChemPhysChem
DOI: 10.1002/cphc.201402896

Ultrafast Spectroscopy

B. Carloti,* E. Benassi,* V. Barone, G. Consiglio, F. Elisei,
A. Mazzoli, A. Spalletti

Effect of the π Bridge and Acceptor on Intramolecular Charge Transfer in Push–Pull Cationic Chromophores: An Ultrafast Spectroscopic and TD-DFT Computational Study

A positive negative! A peculiar negative solvatochromism is revealed for the investigated salts, which implies a significant solution color change when the solvent polarity is increased (see figure).



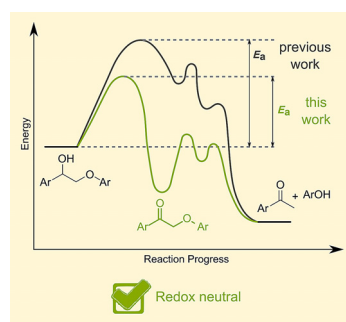
ChemMedChem
DOI: 10.1002/cmdc.201500092

Radiopharmaceuticals

J. Seemann,* B. P. Waldron, F. Roesch, D. Parker

Approaching ‘Kit-Type’ Labelling with ^{68}Ga : The DATA Chelators

Made easier with DATA: The development of kit-type labelling of ^{68}Ga radiopharmaceuticals is a crucial goal that has gathered momentum, with the desire for even simpler radiolabelling protocols and the development of GMP-compliant $^{68}\text{Ge}/^{68}\text{Ga}$ generators. The DATA chelators facilitate quantitative complexation of ^{68}Ga at ambient temperature quickly, simply, and efficiently—characteristics that have the potential to make the elusive ^{68}Ga labelling kit a reality.



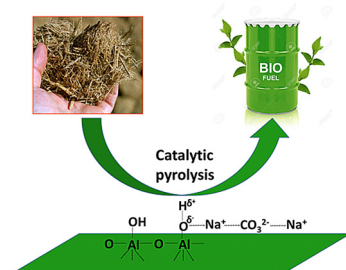
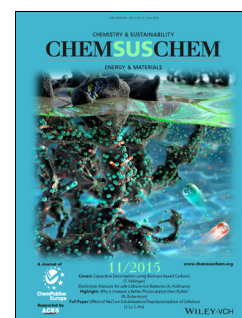
ChemSusChem
DOI: 10.1002/cssc.201500117

Biomass

M. V. Galkin, C. Dahlstrand, J. S. M. Samec*

Mild and Robust Redox-Neutral Pd/C-Catalyzed Lignol β -O-4' Bond Cleavage Through a Low-Energy-Barrier Pathway

Don't, cleave me this way: A Pd/C catalyzed redox neutral C–O bond cleavage of 2-aryloxy-1-arylethanol has been developed. The reactions are carried out at mild conditions to yield the aryl ketones in near quantitative yields. Addition of catalytic amounts of a hydrogen source activates the catalyst sites, and allow to perform the reactions under mild conditions. Mechanistic studies support a transfer hydrogenolysis pathway.



ChemCatChem
DOI: 10.1002/cctc.201500236

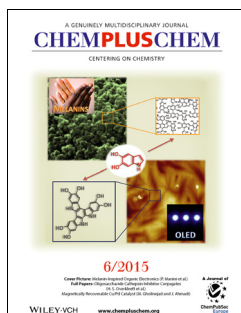
Biomass Conversion

T. S. Nguyen, L. Lefferts, K. B. Sai Sankar Gupta, K. Seshan*

Catalytic Conversion of Biomass Pyrolysis Vapours over Sodium-Based Catalyst: A Study on the State of Sodium on the Catalyst

Hydrated sodium is the Batman! $\text{Na}_2\text{CO}_3/\gamma\text{-Al}_2\text{O}_3$ possesses excellent catalytic activity in biomass pyrolysis but the active species in this system has remained unknown. With the help of solid nuclear magnetic resonance and other characterization techniques this species is suggested to be the hydrated sodium phase.



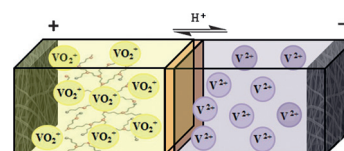


Redox Flow Batteries

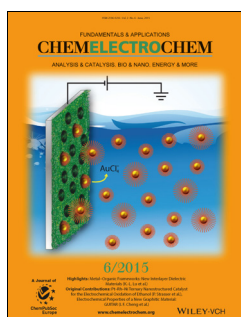
C. Flox,* J. Rubio-Garcia, M. Skoumal, J. Vázquez-Galván, E. Ventosa, J. R. Morante

Thermally Stable Positive Electrolytes with a Superior Performance in All-Vanadium Redox Flow Batteries

To boost the commercialization of vanadium redox flow batteries, a 5 KDa poly(ethyleneimine)-based dendritic additive was implemented in positive electrolyte. The energy density (to ca. 19.5 Wh L⁻¹) and thermal stability (60 °C) improved considerably.



ChemPlusChem
DOI: 10.1002/cplu.201402336

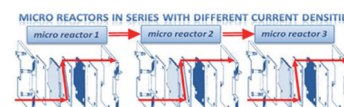


Electrochemical Synthesis

O. Scialdone,* A. Galia, S. Sabatino, D. Mira, C. Amatore

Electrochemical Conversion of Dichloroacetic Acid to Chloroacetic Acid in a Microfluidic Stack and in a Series of Microfluidic Reactors

First stack 'em then line 'em up: Electrochemical synthesis of chloroacetic acid is performed with microreactors in series under a single-pass mode without supporting electrolyte at low cell voltages. An increase of the productivity is achieved by using a stack with two or three electrode chambers in series. The utilization of three microreactors in series gives the opportunity to modulate the current density among the reactors to optimize the process.



ChemElectroChem
DOI: 10.1002/celec.201402454

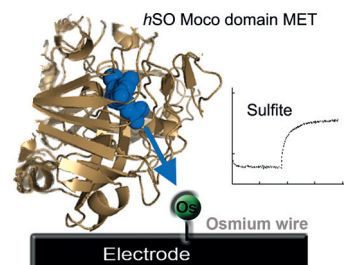


Immobilized Biocatalysts

R. Spricigo, S. Leimkübler, L. Gorton, F. W. Scheller, U. Wollenberger*

The Electrically Wired Molybdenum Domain of Human Sulfite Oxidase is Bioelectrocatalytically Active

Human sulfite oxidase and its catalytic molybdenum-cofactor-containing domain were wired to an electrode with poly(vinylpyridine)-[osmium(N,N'-methyl-2,2'-biimidazole)₃]^{2+/3+}, which mediated the electron transfer between either of the enzyme cofactors and the electrode, as demonstrated by electrocatalytic turnover currents.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201500034

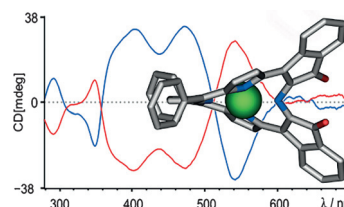


Helimeric Porphyrinoids

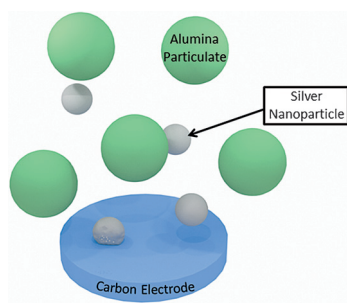
D. C. G. Götz, A. C. Gehrold, S. J. Dorazio, P. Daddario, L. Samankumara, G. Bringmann, C. Brückner,* T. Bruhn*

Indaphyrins and Indachlorins: Optical and Chiroptical Properties of a Family of Helimeric Porphyrinoids

Indaphyrins and indachlorins possess persistent helimeric conformations giving rise to separable enantiomeric pairs. The origins of their optical and chiroptical properties were elucidated.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201500511



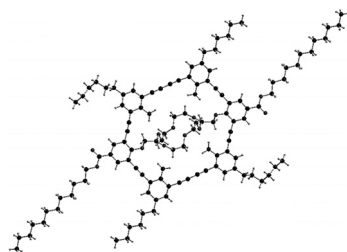
ChemistryOpen
DOI: 10.1002/open.201402161

Nanoparticle Sizing

H. S. Toh, R. G. Compton*

'Nano-impacts': An Electrochemical Technique for Nanoparticle Sizing in Optically Opaque Solutions

Small events with big impact! The 'nano-impacts' technique was shown to be a feasible method for silver nanoparticle detection and size determination in optically opaque medium, such as a solution containing a large amount of alumina, where tradition in situ methods fail. This confers the 'nano-impacts' technique a strong advantage over optical methods that are unable to process optically opaque samples.



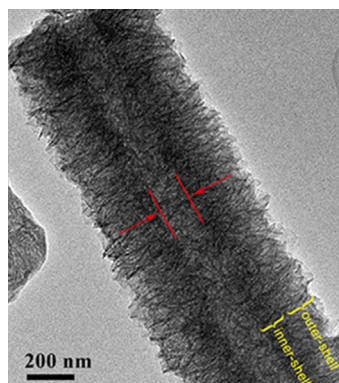
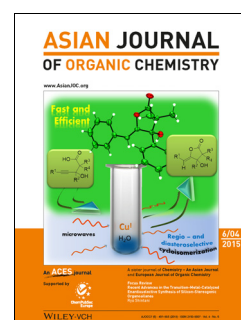
Asian J. Org. Chem.
DOI: 10.1002/ajoc.201500146

Supramolecular Chemistry

H. Nie, Y. Geng, D. Luo, M. Liu, Y. Wang, Z. Liu, Q. Zeng,* L. Shu*

Synthesis and Morphology of a Shape-Persistent Macrocycle with *endo*-Amines and an Inner Tetraethylene Glycol Ether Bridge

Rich and por-ous: An *endo*-amino-functionalized shape-persistent macrocycle with a tetraethylene glycol bridge was prepared. Single crystal X-ray analysis revealed that it can form a parallel porous structure based on Van der Waals, π - π , and dipole-dipole interaction, and it can self-assemble into a single monolayer on a highly oriented pyrolytic graphite (HOPG) surface via Van der Waals interactions.



ChemNanoMat
DOI: 10.1002/cnma.201500016

Supercapacitors

Y. P. Huang, Z. Y. Liang, Y.-E. Miao, T. X. Liu*

Diameter-Controlled Synthesis and Capacitive Performance of Mesoporous Dual-Layer MnO_2 Nanotubes

Nanotube supercapacitors: The controllable synthesis of dual-layer MnO_2 nanotubes is presented via a simple in situ redox reaction. This intriguing structure composed of a compact inner-shell and a mesoporous sheet-like outer-shell structure offers a high contact area for fast ion diffusion, and thus exhibits excellent cycling stability and good capacitive behavior.



ChemViews magazine
DOI: 10.1002/chemv.201500028

Polymers

V. Köster

Plasticizers - Benefits, Trends, Health, and Environmental Issues

Plasticizers increase the elasticity of polymer materials. Dr. Stéphane Content, European Council for Plasticisers and Intermediates (ECPI), talks about health and environmental issues, the impact of safety regulations on the industry, and the work of the ECPI. He also debunks some common misconceptions about plasticizers.

