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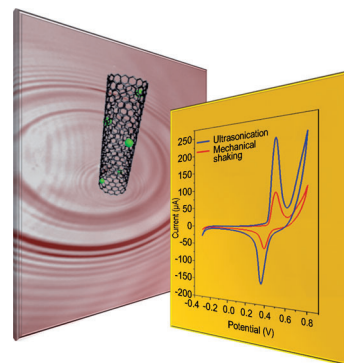


Nanostructures

R. J. Toh, A. Ambrosi, M. Pumera*

Bioavailability of Metallic Impurities in Carbon Nanotubes is Greatly Enhanced by Ultrasonication

The influence of ultrasonication upon the bioavailability of metallic impurities in carbon nanotubes was investigated. Ultrasonication times as short as 5 min significantly enhanced the bioavailability of metallic impurities leading to a more active interaction with biologically important molecules (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201201955

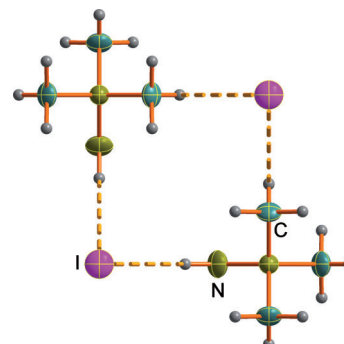


Energetic Salts

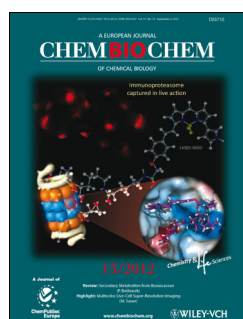
C. M. Sabaté,* H. Delalu, E. Jeanneau

Energetic Hydrazine-Based Salts with Nitrogen-Rich and Oxidizing Anions

Bursting with energy: 1,1,1-Trimethylhydrazinium iodide (see figure) was used as a starting material for the synthesis of energetic salts with nitrogen-rich and oxidizing anions. Many of the compounds have excellent thermal stabilities, low sensitivities towards classical stimuli, and performance values higher than the commonly used 1,3,5-trinitro-toluene (TNT).



Chem. Asian J.
DOI: 10.1002/asia.201200437

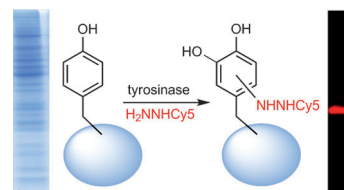


Protein Derivatization

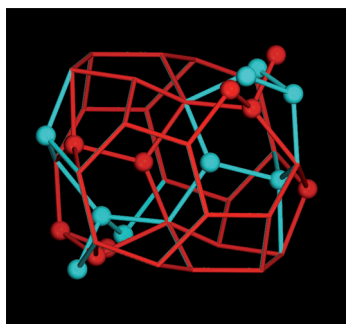
M. J. C. Long, L. Hedstrom*

Mushroom Tyrosinase Oxidizes Tyrosine-Rich Sequences to Allow Selective Protein Functionalization

Mushroom tyrosinase is a multifaceted chemical biology tool: This enzyme catalyzes the formation of *o*-quinones in tyrosine-rich peptide sequences such as the HA tag. These *o*-quinones can be selectively functionalized with hydrazine dyes to create labeled proteins. Under different reaction conditions, the *o*-quinones induce protein cleavage or crosslinking.



ChemBioChem
DOI: 10.1002/cbic.201100792



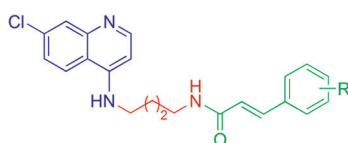
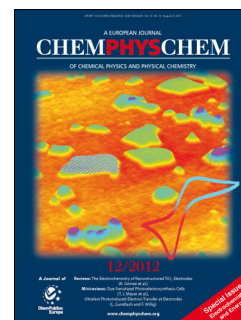
ChemPhysChem
DOI: 10.1002/cphc.201200414

Water Clusters

M. Tadokoro,* Y. Ohata, Y. Shimazaki, K. Isoda, T. Sugaya

Pre-Melting Structure Transformation of Water Clusters in Nanoporous Molecular Crystals

Water nanotubes are one-dimensional channels of water clusters that exist in nanoporous H-bonded metal-coordination crystals of cobalt(III) complexes and trimesate. It is shown by X-ray crystallography that the pre-melting endothermic peak observed in the ascending differential scanning calorimetry curve results from partial movement of water molecules of the frozen state as a result of a structural transition (see picture).



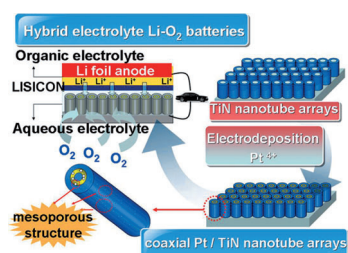
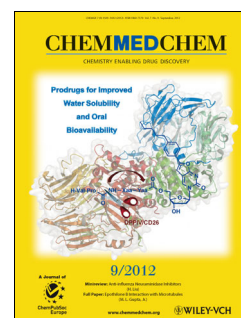
ChemMedChem
DOI: 10.1002/cmdc.201200257

Antimalarial Agents

B. Pérez, C. Teixeira, J. Gut, P. J. Rosenthal, J. R. B. Gomes, P. Gomes*

Cinnamic Acid/Chloroquinoline Conjugates as Potent Agents against Chloroquine-Resistant *Plasmodium falciparum*

Cinnamic acid derivatives containing a 4-amino-7-chloroquinoline scaffold (blue) and substituted cinnamoyl building blocks (green) linked through an alkylamine chain (red) were found to have potent (11–59 nM) in vitro activities against erythrocytic chloroquine-resistant *Plasmodium falciparum*.



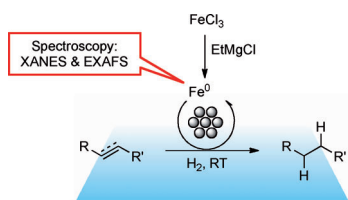
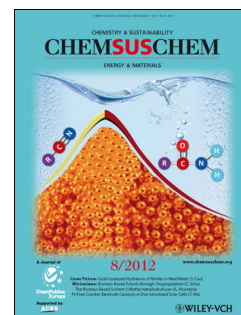
ChemSusChem
DOI: 10.1002/cssc.201200286

Batteries

S. Dong, X. Chen, S. Wang, L. Gu, L. Zhang, X. Wang, X. Zhou, Z. Liu, P. Han, Y. Duan, H. Xu, J. Yao, C. Zhang, K. Zhang, G. Cui,* L. Chen

1D Coaxial Platinum/Titanium Nitride Nanotube Arrays with Enhanced Electrocatalytic Activity for the Oxygen Reduction Reaction: Towards Li-Air Batteries

Cat on a hot TiN support: Coaxial Pt/TiN nanotube arrays are used to achieve a superior electrocatalytic activity of platinum towards the oxygen reduction reaction (ORR). Compared to a commercial Pt/C catalyst, the Pt/TiN NTA materials delivers a higher mass activity and specific activity for the ORR. Hence, these materials are useful as cathodes for hybrid electrolyte Li-air batteries, as demonstrated.



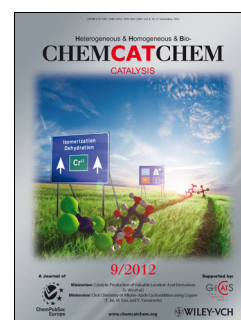
ChemCatChem
DOI: 10.1002/cctc.201100400

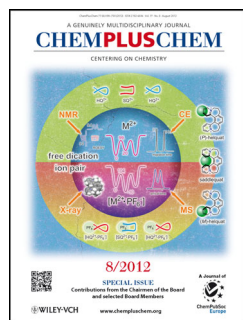
Iron Catalysis

A. Welther, M. Bauer,* M. Mayer, A. Jacobi von Wangelin*

Iron(0) Particles: Catalytic Hydrogenations and Spectroscopic Studies

Ironing it out: The simple pre-catalyst system FeCl₃/EtMgCl was applied to the hydrogenation of various alkenes and alkynes at room temperature. Domino iron-catalyzed allylation/hydrogenation reactions were performed under 1–4 bar H₂. Spectroscopic studies determined the heterogeneous nature of the active catalyst species, its oxidation state (Fe⁰), and the local structure and size of the formed particles.



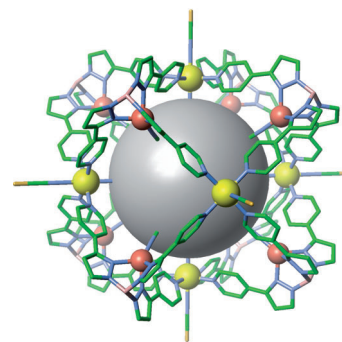


Spin-Crossover Molecules

M. B. Duriska, S. M. Neville,* B. Moubaraki, K. S. Murray, C. Balde, J.-F. Létard, C. J. Kepert, S. R. Batten*

A Family of Discrete Magnetically Switchable Nanoballs

Nanoswitches: A family of 3 nm sized metallocsupramolecular “nanoballs” can be switched between high spin and low spin states by change in temperature or irradiation by light, and they are the largest discrete spin-crossover molecules reported to date (see structure). Variation of axial iron-bound NCX ligands leads to increasing transition temperatures and more complete spin transitions in the order $X = S < Se < BH_3$.



ChemPlusChem
DOI: 10.1002/cplu.201200123

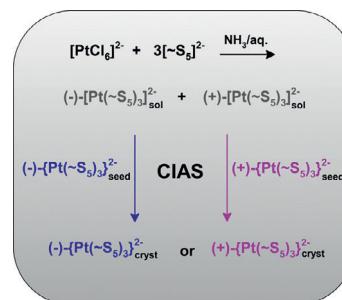


Asymmetric Synthesis

W. K. Rybak,* A. Cymbaluk, M. Siczek, J. Skonieczny

Crystallization-Induced Asymmetric Synthesis of Nonracemic Platinum(IV) Polysulfide Tris(chelate) Complexes

The anionic complex $[Pt(S_3)_3]^{2-}$ is obtained in a nonracemic form by a newly recognized mechanism, the conglomerate crystallization-induced asymmetric synthesis (CIAS). With vigorous stirring, the synthesis is operating autocatalytic. This demonstrates the usefulness of chiral crystalline conglomerates in asymmetric synthesis.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201200479

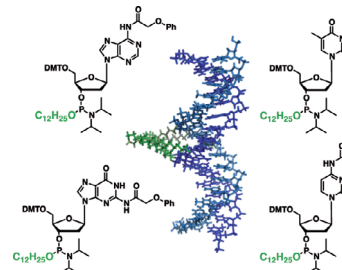


Hydrophobic Zipper

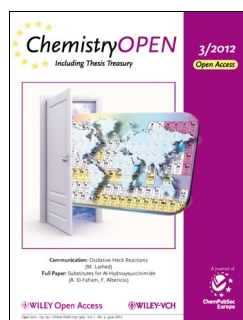
C. Dohno,* T. Shibata, M. Okazaki, S. Makishi, K. Nakatani*

Amphiphilic DNA Duplex Stabilized by a Hydrophobic Zipper

A new amphiphilic DNA consisting of dodecyl phosphotriester linkages was synthesized. The internal hydrophobic region stabilizes the duplex by hydrophobic zipper formation.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201200540

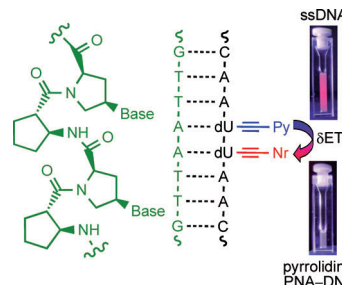


Fluorescent Probes

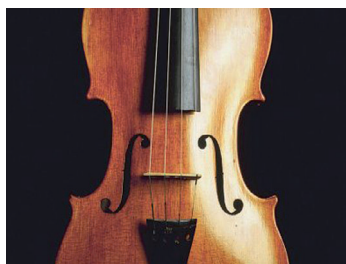
S. Sezi, R. Varghese, T. Vilaivan,* H.-A. Wagenknecht*

Conformational Control of Dual Emission by Pyrrolidinyl PNA–DNA Hybrids

Control by conformation: The photophysical interactions and energy transfer between the covalently attached chromophores ethynyl pyrene (Py) and ethynyl nile red (Nr) can be much better realized when modulated with the sterically constrained pyrrolidinyl PNA (shown in green) than with pure DNA.



ChemistryOpen
DOI: 10.1002/open.201200016



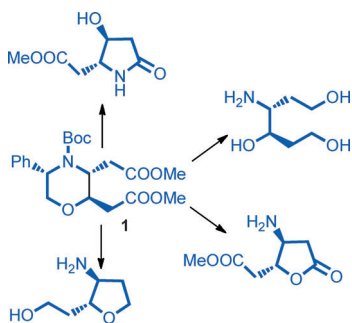
ChemViews magazine
DOI: 10.1002/chemv.201200057

Chemistry and Music

Klaus Roth

Chemical Secrets of the Violin Virtuosi – Part 2

The body of a violin consists exclusively of wood, from the spruce of the soundboard to the maple of the bridge. Klaus Roth considers from a chemical point of view the factors that came together for Stradivari – choice woods and high-quality primer and varnish – in the hope of perhaps coming a bit closer to Stradivari's secret.



Asian J. Org. Chem.
DOI: 10.1002/ajoc.201200033

Heterocycle Synthesis

G. Pandey,* A. L. Gaikwad, S. R. Gadre

Dimethyl [(2*R*,3*R*,5*S*)-5-phenylmorpholine-2,3-diyl]diacetate as a Designer Substrate in the Syntheses of Important Heterocyclic Scaffolds

Multitalented morpholine: Designed scaffold dimethyl [(2*R*,3*R*,5*S*)-5-phenylmorpholine-2,3-diyl]diacetate (**1**) was synthesized in optically pure form by photoinduced one-electron reductive β -activation of an α,β -unsaturated carbonyl moiety in a stereoselective C–C bond-forming reaction. Use of **1** as “chemical multitalent” is demonstrated by its easy transformation into heterocyclic compounds that are valuable in synthesis. Boc = *tert*-butoxycarbonyl.

