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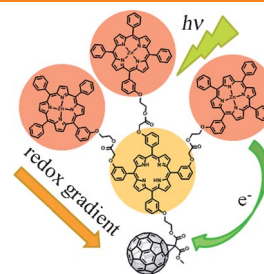


Dendritic Molecules

S. Schlundt, G. Kuzmanich, F. Spänig, G. de Miguel Rojas, C. Kovacs, M. A. Garcia-Garibay,* D. M. Guldi,* A. Hirsch*

Dendritic Porphyrin–Fullerene Conjugates: Efficient Light-Harvesting and Charge-Transfer Events

Artificial photosynthesis at work: A dendritic porphyrin–fullerene hybrid capable of light harvesting and photoinduced electron transfer was synthesized and photophysically probed (see scheme). Highly viscous environments were applied and a charge-separated state with lifetimes of up to 460 ns was observed.



Chem. Eur. J.
DOI: 10.1002/chem.200902161

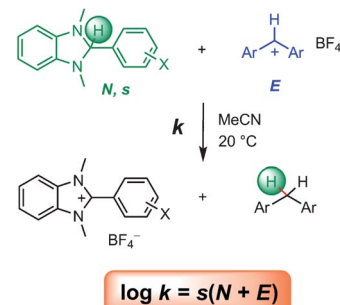


Hydride Abstraction

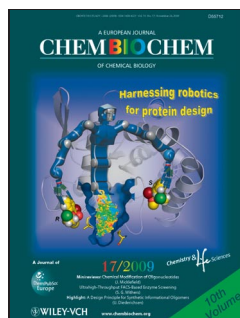
D. Richter, Y. Tan, A. Antipova, X.-Q. Zhu,* H. Mayr*

Kinetics of Hydride Abstractions from 2-Arylbenzimidazolines

Strong neutral hydride donors: The kinetics of hydride abstractions from 2-arylbenzimidazolines by benzhydrylium ions were determined and analyzed according to the linear free energy relationship $\log k = s(N + E)$. The nucleophilicity parameters N show that 2-arylbenzimidazolines are among the most reactive neutral hydride donors which have so far been parameterized, comparable to dihydropyridines.



Chem. Asian J.
DOI: 10.1002/asia.200900322

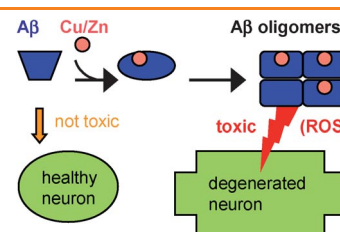


Protein Aggregation

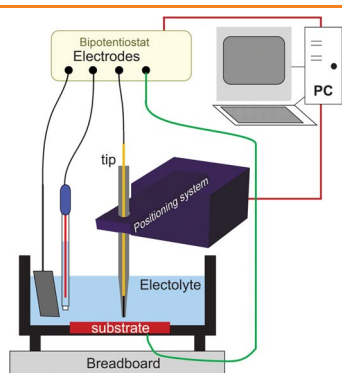
P. Faller*

Copper and Zinc Binding to Amyloid-β: Coordination, Dynamics, Aggregation, Reactivity and Metal-Ion Transfer

The metal side of Alzheimer's disease: Cu and Zn ions have been shown to be involved in two key steps of Alzheimer's disease (AD): aggregation of the peptide amyloid-β (Aβ) and production of reactive oxygen species. Cu/Zn–Aβ complexes are observed in AD, but not under healthy conditions. Thus, the understanding of how these metal ions interact with Aβ has become an important issue for AD.



ChemBioChem
DOI: 10.1002/cbic.200900321



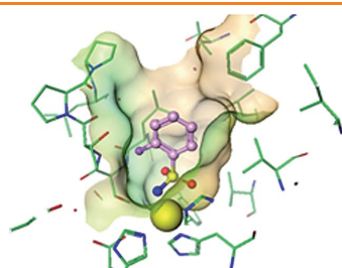
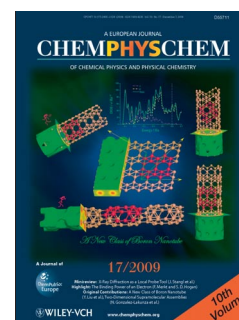
ChemPhysChem
DOI: 10.1002/cphc.200900506

Electrochemistry

M. Keddad, N. Portail, D. Trinh, V. Vivier*

Progress in Scanning Electrochemical Microscopy by Coupling with Electrochemical Impedance and Quartz Crystal Microbalance

Powerful electrochemical couplings: The combination of scanning electrochemical microscopy (see picture) with electrochemical impedance spectroscopy and electrochemical quartz crystal microbalance studies provides interesting insights into various systems. The basic aspects and potential applications of such combined studies are described, and the unique advantages—with additional information being obtained from each coupling—are discussed.



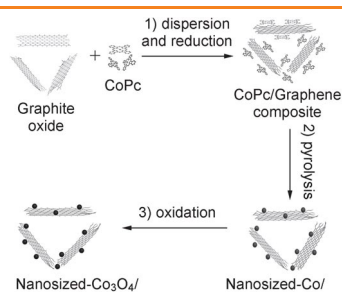
ChemMedChem
DOI: 10.1002/cmdc.200900386

Drug Design

A. D. Scott,* C. Phillips, A. Alex, M. Flocco, A. Bent, A. Randall, R. O'Brien, L. Damian, L. H. Jones

Thermodynamic Optimisation in Drug Discovery: A Case Study using Carbonic Anhydrase Inhibitors

A systematic thermodynamic analysis of benzene sulfonamide derivatives binding to carbonic anhydrase revealed a unique change in enthalpy for one of the compounds investigated. Subsequent X-ray analysis showed a different binding mode for this compound and further optimization led to a high-affinity, enthalpy-driven compound, emphasizing the importance of thermodynamic profiling.



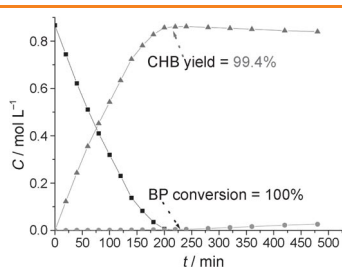
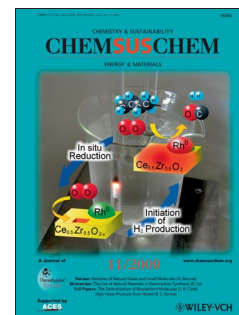
ChemSusChem
DOI: 10.1002/cssc.200900106

Lithium-Ion Batteries

S. Yang, G. Cui, S. Pang, Q. Cao, U. Kolb, X. Feng,* J. Maier, K. Müllen*

Fabrication of Cobalt and Cobalt Oxide/Graphene Composites: Towards High-Performance Anode Materials for Lithium Ion Batteries

Pave a way to high-performance anode materials: Organic metal/graphene composites are fabricated through an in situ assembly of disc-shaped phthalocyanine molecules with graphene sheets during the chemical reduction of graphite oxide, which enables a homogenous dispersion of Co and Co₃O₄ nanoparticles in the sheets after simple pyrolysis and oxidation. The resulting Co₃O₄/graphene composites exhibit remarkable lithium storage performance.



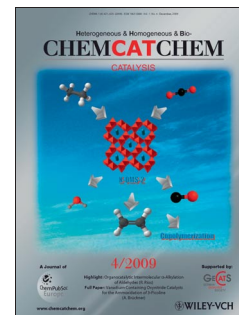
ChemCatChem
DOI: 10.1002/cctc.200900141

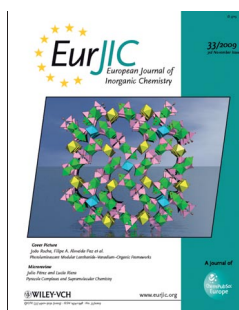
Catalytic Hydrogenation

L. Lu,* Z. Rong, W. Du, S. Ma, S. Hu

Selective Hydrogenation of Single Benzene Ring in Biphenyl Catalyzed by Skeletal Ni

The nickel lining on a Raney day: Highly selective catalytic hydrogenation of biphenyl (BP) to cyclohexylbenzene (CHB) was achieved by using skeletal Ni prepared from rapidly quenched Ni–Al alloys ribbons, affording 100 % conversion and 99.4 % selectivity in a one-pot reaction.



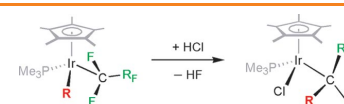


Carbon–Fluorine Bond Activation

R. P. Hughes*

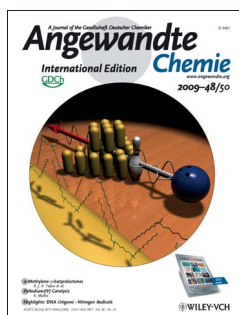
Conversion of Carbon–Fluorine Bonds α to Transition Metal Centers to Carbon–Hydrogen, Carbon–Carbon, and Carbon–Heteroatom Bonds

The stereoselectivity of activation of the carbon–fluorine bond α to iridium by external protic acids has been studied in pseudo-tetrahedral primary fluoroalkyl complexes of iridium. Migration of internal nucleophiles leads to diastereoselective formation of new carbon–oxygen, carbon–sulfur, carbon–hydrogen, and carbon–carbon bonds.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.200900816

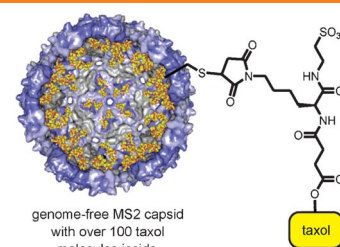


Drug Delivery

W. Wu, S. C. Hsiao, Z. M. Carrico, M. B. Francis*

Genome-Free Viral Capsids as Multivalent Carriers for Taxol Delivery

Delivery by Trojan horse: A water-soluble derivative of the chemotherapeutic agent taxol was synthesized with bioconjugation functionality and attached to capsids of the bacteriophage MS2 (see picture). The modified capsids retained their form and released taxol when incubated with MCF-7 cells. The resulting cell-viability levels were similar to those observed upon treatment with free taxol in solution.



Angew. Chem. Int. Ed.

DOI: 10.1002/anie.200902426