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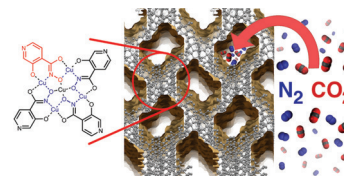


Gas Adsorption

C. Atzeri, L. Marchiò, C. Y. Chow, J. W. Kampf, V. L. Pecoraro,*
M. Tegoni*

Design of 2D Porous Coordination Polymers Based on Metallacrown Units

Permanently porous metallacrowns: Metallacrowns have been exploited for the first time as tailored building blocks for the construction of new (porous) coordination polymers. Metallacrowns are metal-rich complexes that have exhibited excellent properties in magnetism and luminescence. Benefiting from high-interest metallacrown building blocks in the synthesis of MOFs can unfold a whole new class of functional materials (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201600562

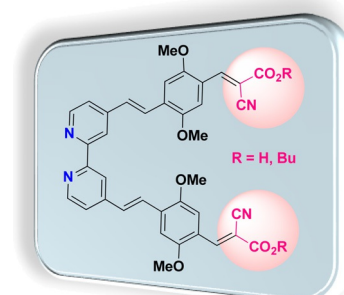


Bipyridines

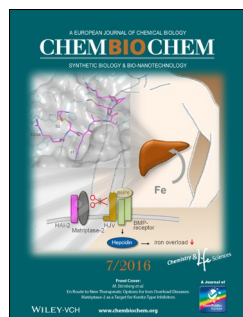
A. Fingerhut, Y. Wu, A. Kahnt,* J. Bachmann,* S. B. Tsogoeva*

Synthesis and Electrochemical and Photophysical Characterization of New 4,4'- π -Conjugated 2,2'-Bipyridines that are End-Capped with Cyanoacrylic Acid/Ester Groups

The fantastic 4,4': The electrochemical and photophysical properties of new 4,4'-disubstituted 2,2'-bipyridines with extended π systems and cyanoacrylic acid or cyanoacrylic acid ester anchoring groups make them promising candidates to build up inorganic–organic hybrid photosensitizers for the sensitization of metal-oxide semiconductors (e.g., TiO₂ nanoparticles and/or nanotubes).



Chem. Asian J.
DOI: 10.1002/asia.201501324

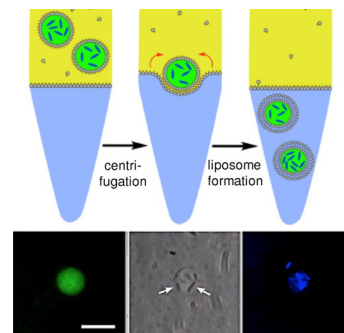


Synthetic Biology

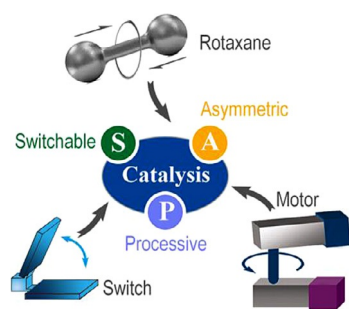
S. Chowdhuri, C. M. Cole, N. K. Devaraj*

Encapsulation of Living Cells within Giant Phospholipid Liposomes Formed by the Inverse-Emulsion Technique

Entrapped: We demonstrate a straightforward way of encapsulating bacteria and yeast in high densities within giant phospholipid vesicles by utilizing the inverse-phase emulsion method. These liposomes can preserve the encapsulated bacterium's viability against external protease degradation and harsh biological environments, while maintaining biocompatibility and biodegradability.



ChemBioChem
DOI: 10.1002/cbic.201500643



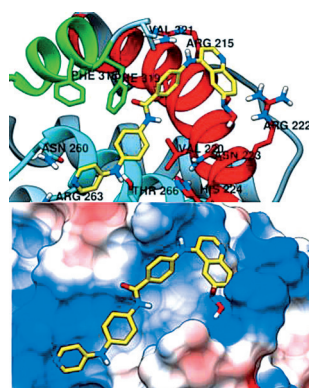
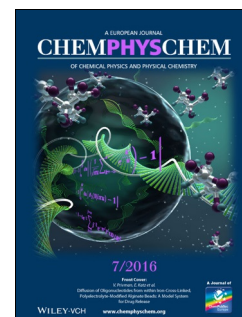
ChemPhysChem
DOI: 10.1002/cphc.201501063

Molecular Machines

T. Pan, J. Liu*

Catalysts Encapsulated in Molecular Machines

Incorporating control: The unique stimulus-responsive feature of molecular machines endows traditional catalysts with dynamic properties. Molecular switches, rotaxanes, and motors are utilized as scaffolds to construct switchable, stereoselective, and processive catalysts (see figure).



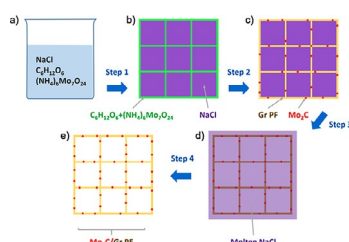
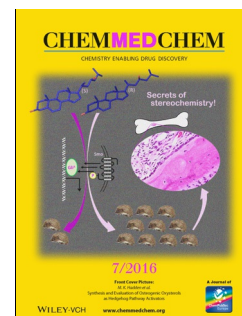
ChemMedChem
DOI: 10.1002/cmdc.201500488

Anticancer Agents

A. M. Beekman, M. A. O'Connell, L. A. Howell*

Identification of Small-Molecule Inhibitors of the Antiapoptotic Protein Myeloid Cell Leukemia-1 (Mcl-1)

Breaking up the party: Overexpression of the antiapoptosis Bcl-2 protein family members is commonly observed in cancers, with myeloid cell leukemia-1 (Mcl-1) often being responsible for resistance to radio and chemotherapy. Exploiting the Mcl-1 selective apoptosis regulating protein Noxa, novel small molecules capable of modulating Mcl-1 are identified and evaluated.



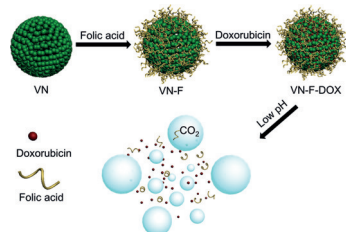
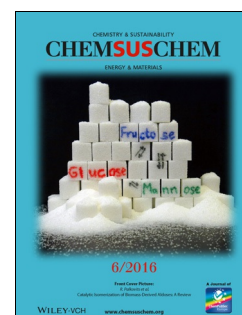
ChemSusChem
DOI: 10.1002/cssc.201501595

Hydrogen Generation

J. Wang, H. Xia, Z. Peng, C. Lv, L. Jin, Y. Zhao, Z. Huang,* C. Zhang*

Graphene Porous Foam Loaded with Molybdenum Carbide Nanoparticulate Electrocatalyst for Effective Hydrogen Generation

Foam party: We report the facile synthesis of graphene porous foam (Gr PF) loaded with homogeneously dispersed molybdenum carbide nanoparticles (Mo_2C) and its effective catalytic activity in the hydrogen evolution reaction. The performance compares favorably to that of other Mo_2C nanostructures both in acidic basic solution with long-term stability in the water electrolysis.



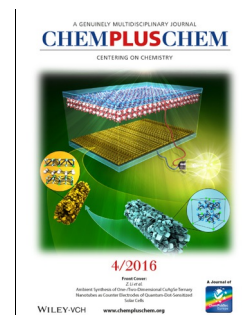
ChemPlusChem
DOI: 10.1002/cplu.201500515

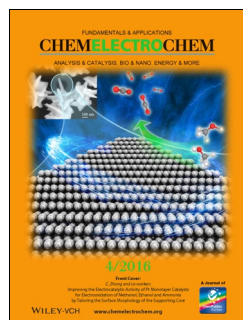
Drug Delivery

A. Wang, Y. Yang,* X. Zhang, X. Liu, W. Cui, J. Li*

Gelatin-Assisted Synthesis of Vaterite Nanoparticles with Higher Surface Area and Porosity as Anticancer Drug Containers In Vitro

Holey vaterite nanoparticles! Porous vaterite nanoparticles (VNs) fabricated with gelatin assistance displayed high surface area and improved stability in aqueous solution. Their application as doxorubicin containers and their therapeutic efficacy against cancer cells were investigated in vitro. The vaterite nanoparticles prove to be excellent containers for anticancer drugs after modification by folic acid.



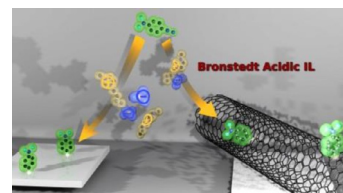


Carbon Materials

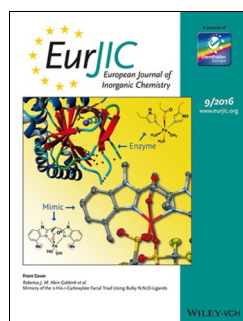
J. Carvalho Padilha, J.-M. Noël, J.-F. Bergamini, J. Rault-Berthelot, C. Lagrost*

Functionalization of Carbon Materials by Reduction of Diazonium Cations Produced in Situ in a Brønsted Acidic Ionic Liquid

Carbon nanotubes and carbon plane surfaces are chemically or electrochemically grafted in a one-pot strategy by combining the specific properties of an acidic imidazolium ionic liquid and the versatility of the diazonium chemistry. Particularly easy to operate, this route exhibits appealing self-limiting and self-patching properties, making it highly valuable to design soft composites.



ChemElectroChem
DOI: 10.1002/celc.201500434

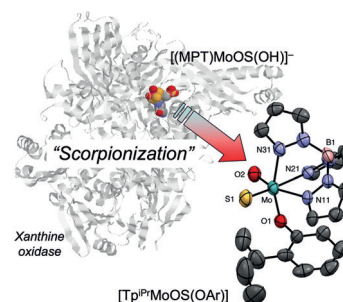


Enzyme Models

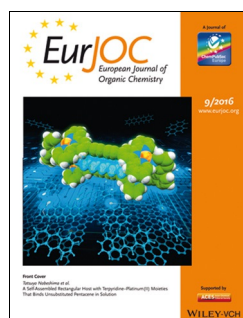
C. G. Young*

Scorpionate Complexes as Models for Molybdenum Enzymes

The study of molybdenum scorpionate complexes has greatly informed our understanding of the geometric and electronic structures, chemical and spectroscopic properties and mechanisms of action of Mo and W enzymes. This microreview focuses on the biologically relevant oxido- and sulfido-Mo(VI,V,IV) chemistry of hydrotris-(R_{1/2}-pyrazolyl)borate and related heteroscorpionate ligands.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201501387

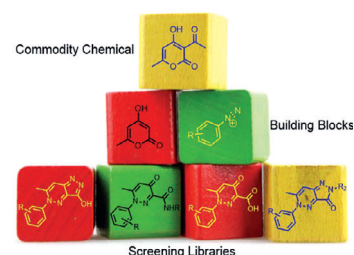


Flow Chemistry

P. Filipponi, I. R. Baxendale*

The Generation of a Library of Bromodomain-Containing Protein Modulators Expedited by Continuous Flow Synthesis

A sequence that uses flow chemistry to enable rapid access and assembly of key building blocks to expedite library generation in a medicinal chemistry program is presented. Emphasis is placed upon the handling of solids and suspensions in flow to improve work-up, isolation and purification.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201600222

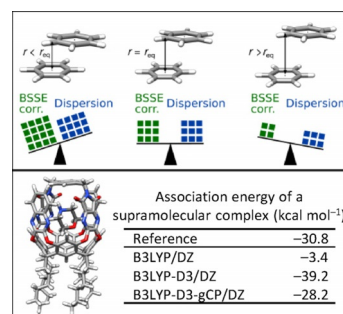


Computational Chemistry

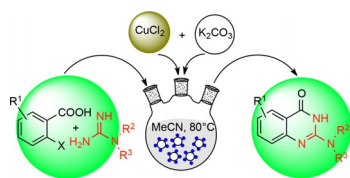
R. Sure, J. G. Brandenburg, S. Grimme*

Small Atomic Orbital Basis Set First-Principles Quantum Chemical Methods for Large Molecular and Periodic Systems: A Critical Analysis of Error Sources

Don't rely on error compensation! Despite the large computational resources nowadays, Hartree-Fock or density functional theory (DFT) calculations are often carried out with small double-zeta atomic orbital basis sets. The main resulting error sources are missing London dispersion and basis set superposition error. This Review shows that one should not rely on fortunate compensation of errors and provides an overview of existing methods and discusses their accuracy for large systems.



ChemistryOpen
DOI: 10.1002/open.201500192



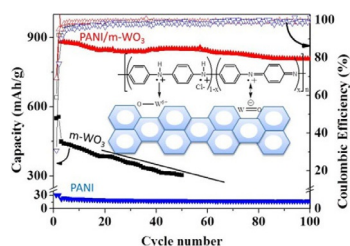
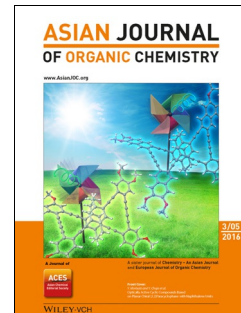
Asian J. Org. Chem.
DOI: 10.1002/ajoc.201600113

Heterogeneous Chemistry

M. S. Thakur, O. S. Nayal, V. Bhatt, S. Sharma, N. Kumar*

Rapid and Efficient Cascade Synthesis of 2-Amino-4(3H)-quinazolinones over an In Situ-Generated Heterogeneous $\text{CuCO}_3\text{--K}_2\text{CO}_3$ Nanocomposite

A green, recyclable, in situ generated, heterogeneous $\text{CuCO}_3\text{--K}_2\text{CO}_3$ nanocomposite-catalyzed cascade reaction between 2-halobenzoic acids and guanidines is described for the synthesis of 2-amino-4(3H)-quinazolinones. The reaction is rapid and proceeds efficiently in air without the addition of a ligand or additive. This protocol is equally applicable to amidines for the synthesis of 2-alkyl- and 2-phenyl-4(3H)-quinazolinones.



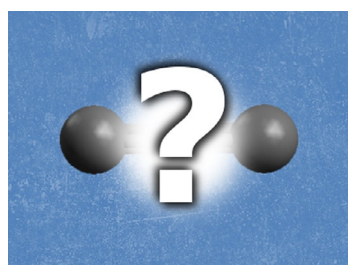
ChemNanoMat
DOI: 10.1002/cnma.201500208

Energy Storage

B. Li, X. Li, W. Li,* Y. Wang, E. Uchaker, Y. Pei, X. Cao, S. Li, B. Huang, G. Cao*

Mesoporous Tungsten Trioxide Polyaniline Nanocomposite as an Anode Material for High-Performance Lithium-Ion Batteries

A nanocomposite of polyaniline (PANI) and mesoporous tungsten trioxide (m-WO_3) was synthesized. The unique PANI coating layer and the chemical interaction between PANI and m-WO_3 can significantly improve the electrochemical performance of the nanocomposite.



ChemViews magazine
DOI: 10.1002/chemv.201600022

Theoretical Chemistry

A. Deveson, D. Cremer, G. Frenking, M. Piris, S. Shaik

Why Does C_2 Cause so Many Problems?

The bonding situation in the humble, small C_2 molecule has been the subject of controversial discussions. Professors Dieter Cremer, Gernot Frenking, Mario Piris, and Sason Shaik explain their opinion on the topic and why it is so important.

