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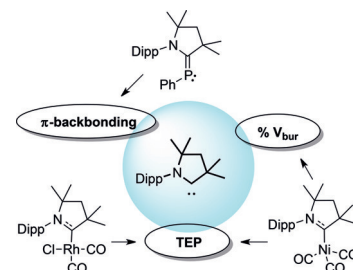


Carbene Complexes

U. S. D. Paul, C. Sieck, M. Haehnel, K. Hammond, T. B. Marder,*
U. Radius*

Cyclic (Alkyl) (Amino)Carbene Complexes of Rhodium and Nickel and Their Steric and Electronic Parameters

Catch and release: Substitution reactions involving novel carbonyl complexes of rhodium and nickel were studied to provide a deeper understanding of the fundamental electronic factors characterizing the cyclic (alkyl) (amino)carbene ligand CAAC^{methyl}, namely, the percentage buried volume (%V_{bur}), the Tolman electronic parameter (TEP), and π backbonding (see figure)



Chem. Eur. J.
DOI: 10.1002/chem.201601406

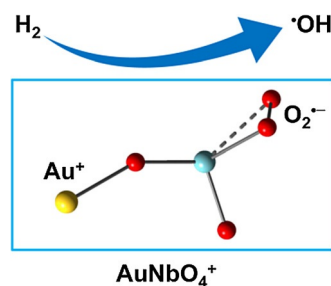


Reaction Mechanisms

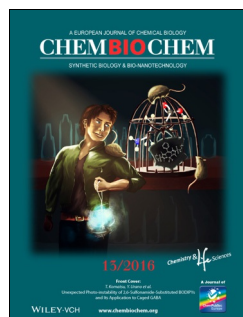
L.-X. Jiang, X.-N. Li,* H.-F. Li, Z.-X. Zhou, S.-G. He*

Generation of Hydroxyl Radicals in the Reaction of Dihydrogen with AuNbO₄⁺ Cluster Cations

Dissociative order: A molecular-level insight into the nature of reactive oxygen species involved in dihydrogen (H₂) dissociation is of great importance to understand gold catalysis. A rather unexpected product of the hydroxyl radical has been identified in the thermal reaction of H₂ with AuNbO₄⁺ (see figure).



Chem. Asian J.
DOI: 10.1002/asia.201600144

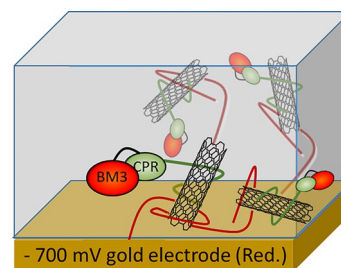


Bio-electrocatalysis

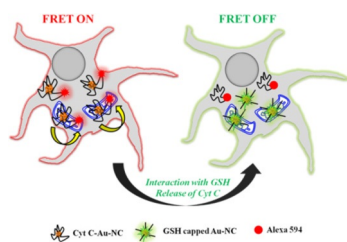
E. C. Llaudet, D. Darimont, R. Samba, I. Matychyn, M. Stelzle,*
M. J. Weissenborn, B. Hauer*

Expanding an Efficient, Electrically Driven and CNT-Tagged P450 System into the Third Dimension: A Nanowired CNT-Containing and Enzyme-Stabilising 3D Sol-Gel Electrode

We successfully established a novel CNT-tag-based enzyme immobilisation technique and obtained considerable electrochemical-driven activity compared with the natural nicotinamide cofactor. Furthermore, the combination with an enzyme-stabilising 3D sol-gel CNT electrode system overcomes the limitation of enzyme load in 2D systems.



ChemBioChem
DOI: 10.1002/cbic.201600173



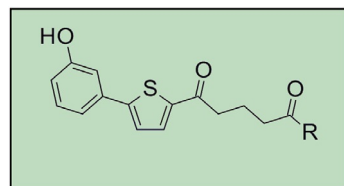
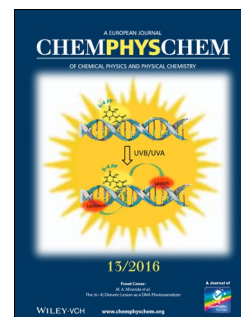
ChemPhysChem
DOI: 10.1002/cphc.201501163

Live-Cell Imaging

S. Chattoraj, M. A. Amin, K. Bhattacharyya*

Cytochrome *c*-Capped Fluorescent Gold Nanoclusters: Imaging of Live Cells and Delivery of Cytochrome *c*

Please remove your cap! In this study, mitochondrial imaging of live cells, using Au nanoclusters (Au-NCs) capped by cytochrome *c* that is labeled with Alexa Fluor 594, involves FRET from the Au-NCs to the Alexa dye. The cytochrome *c*-capped Au-NCs localize in the mitochondria of a live cell, where it interacts with glutathione leading to release of the cytochrome *c* inside the cell, thus switching off the FRET signal.



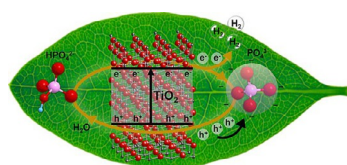
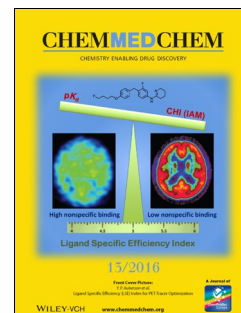
ChemMedChem
DOI: 10.1002/cmdc.201600127

Antiparasite Agents

P. Mäder, A. S. Blohm, T. Quack, K. Lange-Grünweller, A. Grünweller, R. K. Hartmann, C. G. Grevelding,* M. Schlitzer*

Biarylalkyl Carboxylic Acid Derivatives as Novel Antischistosomal Agents

Mind your PZQs: Over 240 million people worldwide are infected by schistosomiasis. Since the 1980s, praziquantel (PZQ) has been the drug of choice for the treatment of schistosomiasis. However, long-term use of one drug may result in drug-resistant parasites. Therefore, we investigated the in vitro potential of biarylalkyl carboxylic acid derivatives against *Schistosoma mansoni*. The present study provides deep insight into structure–activity relationships.



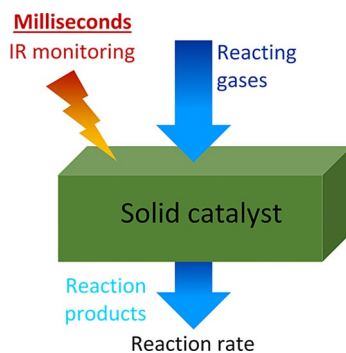
ChemSusChem
DOI: 10.1002/cssc.201600481

Artificial Photosynthesis

J. Wang, T. Zhu, G. W. Ho*

Nature-Inspired Design of Artificial Solar-to-Fuel Conversion Systems based on Copper Phosphate Microflowlers

Flower power: Phosphates play an important role in photosynthesis by mediating electron transport and furnishing energy for CO₂ reduction. Mimicking plant photosynthesis, an artificial solar-to-fuel conversion system composed of versatile copper phosphate microflowlers and titanium dioxide nanoparticles is shown to enhance hydrogen generation by photocatalytic water splitting.



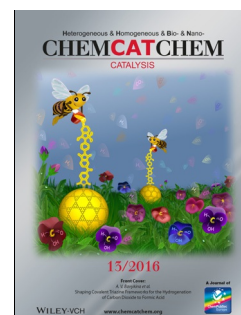
ChemCatChem
DOI: 10.1002/cctc.201600302

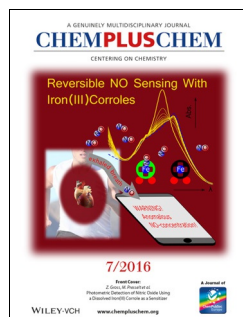
Operando Analysis

A. Davó-Quiñero, A. Bueno-López,* D. Lozano-Castelló, A. J. McCue, J. A. Anderson

Rapid-Scan Operando Infrared Spectroscopy

The operando house: Rapid scan consists of recording IR spectra in the milliseconds time frame and in combination with operando methodology is a highly powerful method to study the mechanisms of reactions performed under heterogeneous catalysis. Rapid-scan operando is used herein to study NO_x-CO and NO_x-H₂ reactions as model catalyzed reactions with practical interest for removal of NO_x in diesel exhausts.



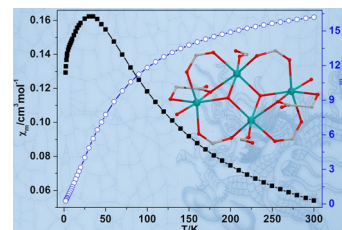


Metal–Organic Frameworks

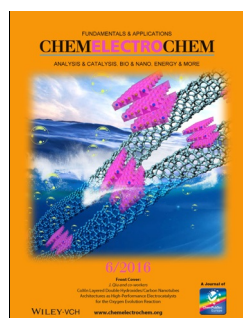
G. Liu, D. Xie, R. Li, L. Hou,* W.-Y. Zhang,* Y.-Y. Wang

Three Cluster Organic Frameworks Constructed from Tetranuclear Cluster Units: Structure and Properties

Rare connections: Three isostructural cluster organic 3D metal–organic frameworks (MOFs) are constructed by combining a semirigid multi-carboxylic acid with tetranuclear metal–hydroxy–carboxyl clusters (see figure). Manganese and cobalt MOFs showed significant antiferromagnetic interactions between intracuster metal ions, whereas the cadmium MOF reveals strong blue photoluminescence.



ChemPlusChem
DOI: 10.1002/cplu.201600025

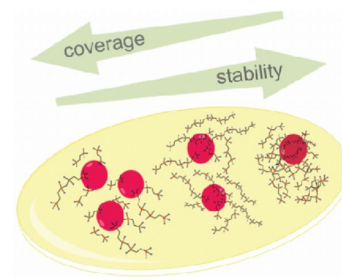


Protein Immobilization

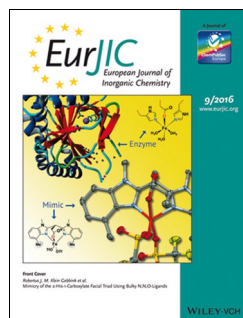
S. Trashin, M. de Jong, V. Meynen, S. Dewilde, K. De Wael*

Attaching Redox Proteins onto Electrode Surfaces by using bis-Silane

Stay connected: bis-Organosilane (BTMSE) is used as a fresh solution in a pH 7 phosphate buffer without the use of an organic solvent or sol-gel preparation for the immobilization of proteins on an electrode surface. A short aging period of 30 min before deposition on the electrodes is optimal for the immobilization of the protein, leading to high coverage and excellent film stability.



ChemElectroChem
DOI: 10.1002/celc.201600021

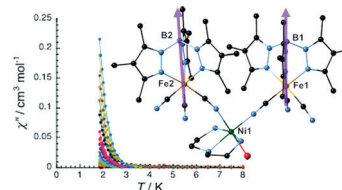


Magnetic Cyanoferrates

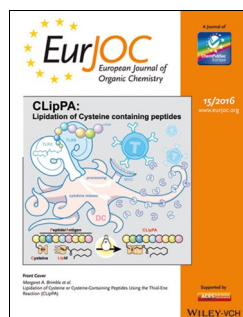
Y. Zhang, U. P. Malik, B. Quiggins, H. Nguyen, C. C. Beedle, A. E. Kovalev, R. Clérac, S. Hill, B. J. Bythell, S. M. Holmes

Structure-Property Relationships in Tricyanoferrate(III) Building Blocks and Trinuclear Cyanide-Bridged Complexes

The preparation, structures, and magnetic properties of a tricyanoferrate, $[\text{NEt}_4][(\text{Tp}^*\text{Me})\text{Fe}(\text{CN})_3]$ (**2**), and three trinuclear $\{\text{Fe}^{\text{III}}_2\text{Ni}^{\text{II}}\}$ derivatives are described. High-field/frequency EPR data indicates significant *g*-anisotropy in **2** and considerable magnetic anisotropy in one $\{\text{Fe}^{\text{III}}_2\text{Ni}^{\text{II}}\}$ complex (**5**).



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201600199

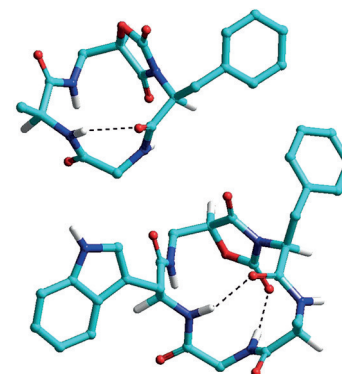


Freidinger Lactam Analogues

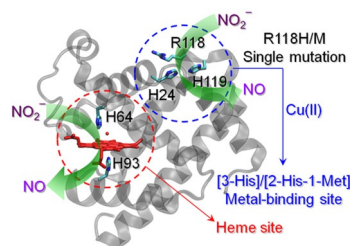
L. Gentilucci,* F. Gallo, F. Meloni, M. Mastandrea, B. Del Secco, R. De Marco*

Controlling Cyclopeptide Backbone Conformation with β/α -Hybrid Peptide–Heterocycle Scaffolds

The inclusion of 5-aminomethyl oxazolidine-2,4-dione (Amo)-dipeptide scaffolds into the sequences of model cyclotetrapeptides and cyclopentapeptides contributes to the formation of well-defined secondary structures. Besides restricting the flexibility of the surrounding portion of the backbone, the scaffolds were able to effectively establish extra stabilizing hydrogen-bond interactions.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201600448



ChemistryOpen

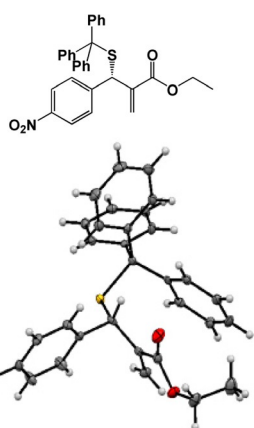
DOI: 10.1002/open.201500224

Protein Design

X.-G. Shu, J.-H. Su, K.-J. Du, Y. You, S.-Q. Gao, D. G.-B. Wen, X. Tan, Y.-W. Lin*

Rational Design of Dual Active Sites in a Single Protein Scaffold: A Case Study of Heme Protein in Myoglobin

A body with two hearts! Rational protein design is a powerful tool for creating functional artificial proteins, particularly those with multiple active sites. In this study, dual active sites in a single heme protein scaffold, myoglobin, were rationally designed by retaining the native heme site and creating a copper-binding site remotely through a single mutation, with both sites exhibiting nitrite reductase activity by reduction of nitrite to nitric oxide.



Asian J. Org. Chem.

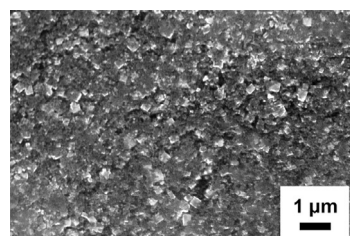
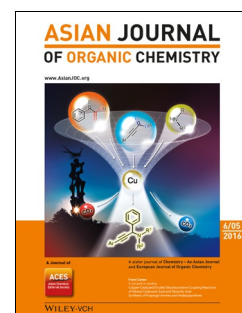
DOI: 10.1002/ajoc.201600212

Organocatalysis

T.-T.-D. Ngo, T.-H. Nguyen, C. Bournaud, R. Guillot, M. Toffano,* G. Vo-Thanh*

Phosphine–Thiourea–Organocatalyzed Asymmetric C–N and C–S Bond Formation Reactions

Phosphine–thiourea-based organocatalysts derived from L-proline efficiently promote C–N and C–S bond formation through the asymmetric allylic substitution of *tert*-butoxycarbonyloxy-Morita–Baylis–Hillman (MBH) adducts with phthalimide or alkyl thiols, respectively. The desired products are afforded in good yields and enantioselectivities.



ChemNanoMat

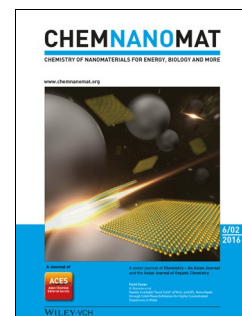
DOI: 10.1002/cnma.201600067

Cathode Materials

P. Strubel, H. Althues, S. Kaskel*

Solution-Based Chemical Process for Synthesis of Highly Active Li₂S/Carbon Nanocomposite for Lithium-Sulfur Batteries

Filling the gaps: Disproportionation of a Li₂S₆ polysulfide solution in the presence of porous carbon yields a composite with a homogeneous Li₂S distribution with small Li₂S particle size and good contact with the carbon surface. The composite is promising for application in high-energy-density long-cycle-life lithium-sulfur batteries.



ChemViews magazine

DOI: 10.1002/chemv.201600042

Food

V. Barton

Growing Steaks in the Lab

Victoria Barton explores progress and challenges in the production of artificial meat. With increasing concerns of environmental issues, food security, and animal welfare, will scientists be the farmers of the future?

