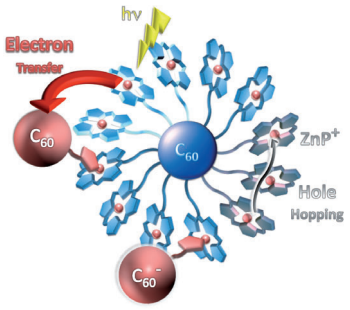
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Artificial Photosynthesis

K. Yoosaf, J. Iehl, I. Nierengarten, M. Hmadeh, A.-M. Albrecht-Gary, J.-F. Nierengarten,* N. Armaroli*

A Supramolecular Photosynthetic Model Made of a Multiporphyrinic Array Constructed around a C_{60} Core and a C_{60}–Imidazole Derivative

Photosynthetic mimics: A self-assembled photosynthetic model resulting from the association of a C_{60}–imidazole derivative with a multimetalloporphyrin array constructed around a hexasubstituted C_{60} core is presented (see figure). Whereas the fullerene hexa-adduct core does not play an active role in the cascade of photoinduced events of the supramolecular ensemble, the guest fullerene monoadduct acts as an electron acceptor, leading to a long-lived charge-separated state in benzonitrile.



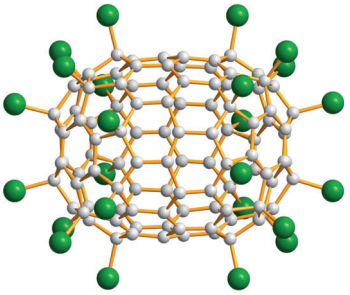
Chem. Eur. J.
DOI: **10.1002/chem.201303481**

Giant Fullerenes

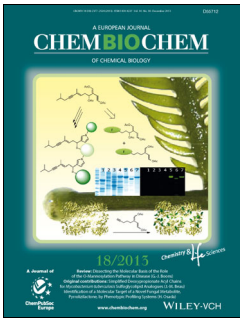
S. Yang,* T. Wei, E. Kemnitz, S. I. Troyanov*

First Isomers of Pristine C_{104} Fullerene Structurally Confirmed as Chlorides, $C_{104}(258)Cl_{16}$ and $C_{104}(812)Cl_{24}$

For the highest isolable empty fullerene, C_{104}, the first direct proof of cage connectivities in two isomers (nos. 258 and 812) has been achieved by chlorination of $(C_{102}+C_{104})$ fractions, which were obtained by recycling HPLC from a fullerene soot, followed by single-crystal X-ray diffraction study of $C_{104}(258)Cl_{16}$ and $C_{104}(812)Cl_{24}$ (see structure: C gray, Cl green) using synchrotron radiation.



Chem. Asian J.
DOI: **10.1002/asia.201301230**

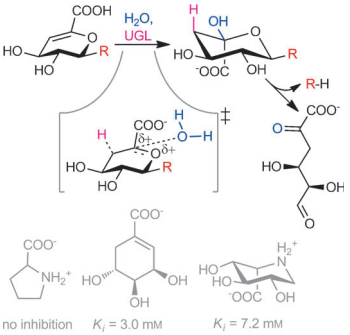


Enzyme Mechanisms

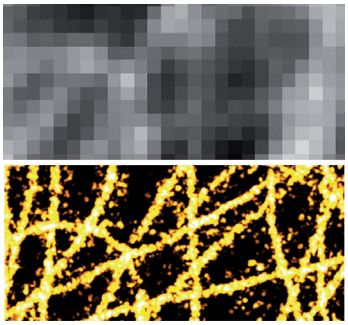
S. A. K. Jongkees, H. Yoo, S. G. Withers*

Mechanistic Insights from Substrate Preference in Unsaturated Glucuronyl Hydrolase

Transition state mimicry: Kinetic data from synthetic aryl unsaturated glycosides and unsaturated glucuronyl fluorides provide evidence for a positively charged transition state in *Clostridium perfringens* unsaturated glucuronyl hydrolase. Testing of inhibitors based on this transition state showed poor inhibition and suggests that the current model is incomplete.



ChemBioChem
DOI: **10.1002/cbic.201300547**



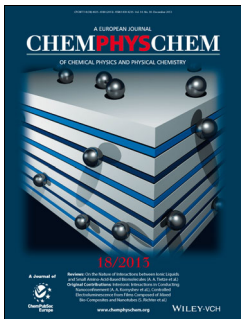
ChemPhysChem
DOI: **10.1002/cphc.201300720**

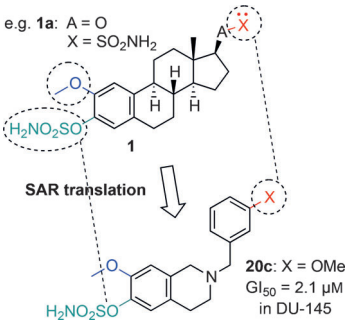
Super-resolution Imaging

M. Lakadamyali*

Super-Resolution Microscopy: Going Live and Going Fast

The tool to have: Far-field fluorescence microscopy has undergone a revolution with the development of super-resolution microscopes. In less than ten years, these microscopes are already peering into biological processes in living cells with unmatched spatiotemporal resolution and bringing about exciting new discoveries in biology. Live-cell super-resolution microscopy might soon become the indispensable tool for every biologist.





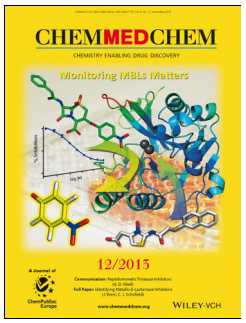
ChemMedChem
DOI: **10.1002/cmdc.201300261**

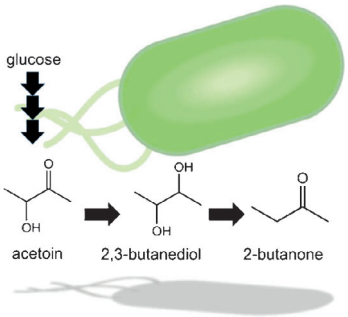
Microtubule Disruptors

M. P. Leese, F. L. Jourdan, M. R. Major, W. Dohle, E. Hamel, E. Ferrandis, A. Fiore, P. G. Kasprzyk, B. V. L. Potter*

Tetrahydroisoquinolinone-Based Steroidomimetic and Chimeric Microtubule Disruptors

Found in translation! Tetrahydroisoquinoline (THIQ)-based steroidomimetic and chimeric microtubule disruptors (e.g., **20c**) have been identified. Control experiments demonstrate the complementary SAR of this series and the steroidal compounds that inspired its design. A series of chimeric molecules whose activity (GI_{50} = 40 nM) surpasses that of the parent steroid derivatives and a compound that shows excellent oral activity in an in vivo model of multiple myeloma were also identified.





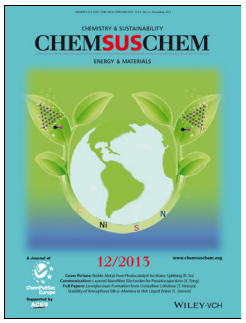
ChemSusChem
DOI: **10.1002/cssc.201300853**

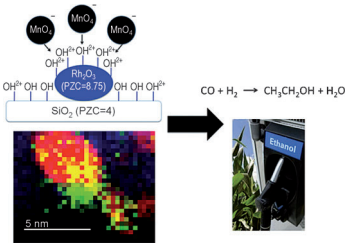
Biological Production

H. Yoneda, D. J. Tantillo, S. Atsumi*

Biological Production of 2-Butanone in *Escherichia coli*

I like 2-butanone and I cannot lie: *Escherichia coli* is engineered to synthesize 150 mg L^{-1} 2-butanone, by combining the biosynthetic pathways of 2,3-butanediol and a promiscuous co-enzyme B12-dependent glycerol dehydratase and its reactivator protein. This demonstration provides the possibility to produce this valuable chemical in a renewable and sustainable manner.





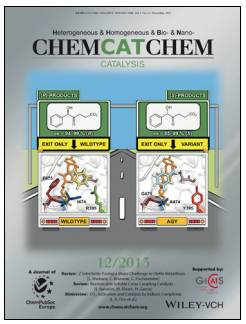
ChemCatChem
DOI: **10.1002/cctc.201300479**

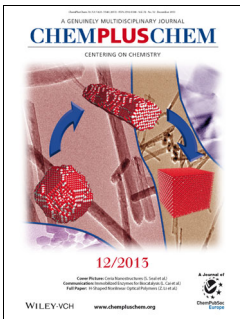
Alcohol Synthesis

J. Liu, R. Tao, Z. Guo, J. R. Regalbuto, C. L. Marshall, R. F. Klie, J. T. Miller, R. J. Meyer*

Selective Adsorption of Manganese onto Rhodium for Optimized $Mn/Rh/SiO_2$ Alcohol Synthesis Catalysts

Stronger interactions: A key design objective in promoted catalysts synthesis is to increase the promoter–metal interactions to maximize the promotion effectiveness, and this intimate interaction can be achieved by the strong electrostatic adsorption synthesis method. With stronger promoter (Mn)–metal (Rh) interactions, enhanced ethanol production is also achieved. PZC = Point of zero charge.



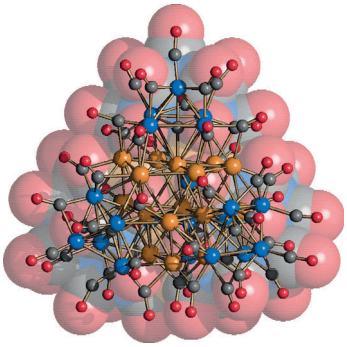


Cluster Compounds

I. Ciabatti, F. Fabrizi de Biani, C. Femoni, M. C. Iapalucci, G. Longoni, S. Zacchini*

Metal Segregation in Bimetallic Co–Pd Carbide Carbonyl Clusters: Synthesis, Structure, Reactivity and Electrochemistry of $[H_{6-n}Co_{20}Pd_{16}C_4(CO)_{48}]^{n-}$ $(n = 3–6)$

Kept apart: Bimetallic nanometric Co–Pd tetracarbide carbonyl clusters have been prepared by redox condensation. Their crystal structures, in which a cubic close-packed (ccp) Pd_{16} core is stabilised by four $Co_5C(CO)_{12}$ organometallic fragments, display a perfect segregation of the two metals (see figure).



ChemPlusChem
DOI: **10.1002/cplu.201300268**

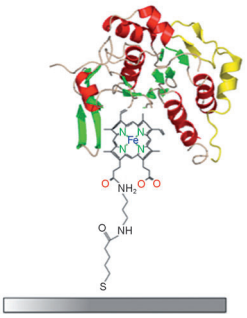
Computational Electrochemistry

R. Vazquez-Duhalt,* S. A. Aguila, A. A. Arrocha, M. Ayala

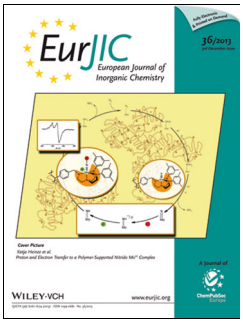
QM/MM Molecular Modeling and Marcus Theory in the Molecular Design of Electrodes for Enzymatic Fuel Cells

Chemistry's next top model? Electron transfer (ET) between the redox-active site of the protein and the electrode surface is a key issue in the design of enzymatic electrodes (see picture) and fuel cells. This review discusses the use of Marcus theory and hybrid quantum mechanics/molecular mechanics (QM/MM) modeling to predict ET between enzymes and electrode surfaces for the rational molecular design of enzymatic electrodes and fuel cells.

$$\ln k_{ET} = \ln k_0 - \frac{\lambda}{4\,RT} + \frac{F\,\Delta E}{2\,RT} + \frac{F^2\Delta E^2}{4\,\lambda RT}$$



ChemElectroChem
DOI: **10.1002/celc.201300096**

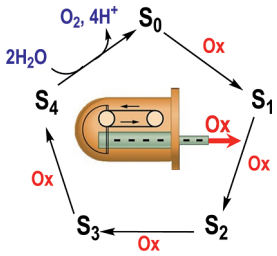


Water Oxidation Mechanisms

D. E. Polyansky, J. K. Hurst, S. V. Lymar*

Application of Pulse Radiolysis to Mechanistic Investigations of Water Oxidation Catalysis

The ability of pulse radiolysis to generate strong one-electron oxidants makes it a powerful tool for mechanistic studies of water oxidation catalysis. This assertion is documented by a review of its application to studies of both heterogeneous and homogeneous catalysts from which the optical spectra and redox dynamics of key catalytic intermediates have been determined.



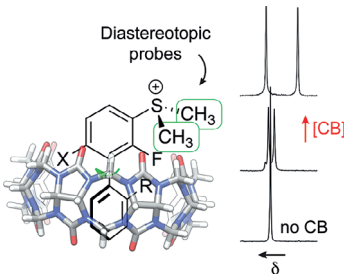
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201300753**

Host-Guest Systems

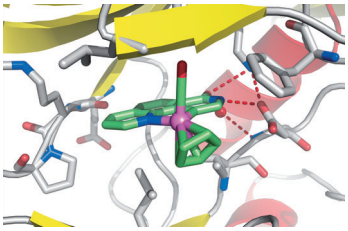
R. Joseph, E. Masson*

Atropisomerization in Confined Space; Cucurbiturils as Tools to Determine the Torsional Barrier of Substituted Biphenyls

Cucurbiturils were used for the first time as analytical accessories to access coveted kinetic parameters, namely the torsional barriers of substituted biphenyls.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201301460**



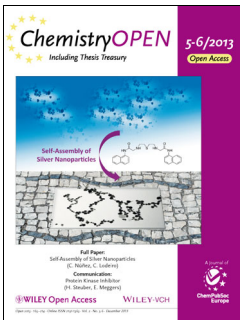
ChemistryOpen
DOI: **10.1002/open.201300031**

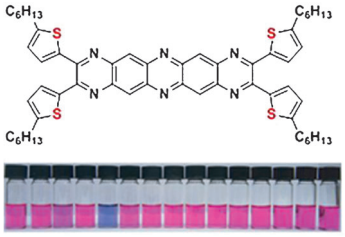
Enzyme Inhibitors

K. Wähler, K. Kräling, H. Steuber,* E. Meggers*

Non-ATP-Mimetic Organometallic Protein Kinase Inhibitor

Non-hinge binding: A novel organometallic protein kinase inhibitor scaffold based on a cyclometalated 1,8-phenanthrolin-7(8*H*)-one ligand is reported, which binds to the ATP binding site of the protein kinase Pim1 in an unexpected, unusual non-ATP-mimetic fashion without mimicking the hydrogen-bonding interaction of the adenine nucleobase of ATP.





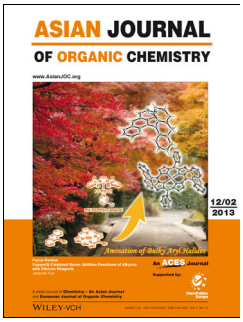
Asian J. Org. Chem.
DOI: **10.1002/ajoc.201300210**

Copper Sensors

G. Li, J. Gao, Q. Zhang*

Synthesis, Characterization, and Sensing Behavior of an N-heteropentacene

Copper turned detective: An N-heteropentacene, 1,2,5,6-tetra(5-hexylthiophene-2-yl)-hexaazapentacene (**4HP**), was synthesized through one-step cyclocondensation reaction. The binding behavior of **4HP** toward various metal cations was studied by UV/vis and fluorescence spectroscopy. **4HP** demonstrated a selective and sensitive response towards Cu^{2+} ions, and the detection limit is 1.2 μM in *N*,*N*-dimethylformamide solution.



ChemViews magazine
DOI: **10.1002/chemv.201300132**

Nanocages

K. Lawrence

Phthalocyanine-based Nanocages

In the new series Behind the Science, in which journal editors talk to authors about the research behind their latest manuscript, Kate Lawrence, Editor for *ChemPhysChem* and *ChemElectroChem*, talks to Professor Qiang Sun about his article on Phthalocyanine-based Nanocages. They discuss his inspiration, the broader impact of the paper, and how he intends to follow up on this study.