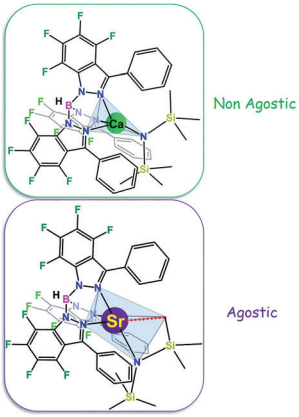
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Alkaline Earth Metals

N. Romero, S.-C. Roşca, Y. Sarazin, J.-F. Carpentier, L. Vendier, S. Mallet-Ladeira, C. Dinoi,* M. Etienne*

Highly Fluorinated Tris(indazolyl)borate Silylamido Complexes of the Heavier Alkaline Earth Metals: Synthesis, Characterization, and Efficient Catalytic Intramolecular Hydroamination

Stabilized distortion: The highly fluorinated 3-phenyl hydrotris(indazolyl)borate ligand $\{F_{12}\text{-}Tp^{4Bo,3Ph}\}^-$ coordinates the Ca and Sr metals to afford the heteroleptic silylamido derivatives $[(F_{12}\text{-}Tp^{4Bo,3Ph})\text{-}Ae\{N(SiMe_2R)_2\}]$ (Alkaline earth metal (Ae) = Ca, Sr, R = Me; Ae = Ca, R = H). Agostic distortions, which are especially strong for Sr, stabilize the structures (see figure). The complexes containing the $\{N(SiMe_3)_2\}^-$ ligand catalyze the cyclohydroamination of aminoalkenes. The synthesis of the new homoleptic unsolvated $[Ca\{N(SiMe_2H)_2\}_2]$ precursor is also described.



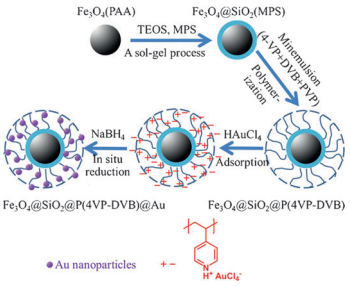
Chem. Eur. J.
DOI: **10.1002/chem.201405454**

Nanostructures

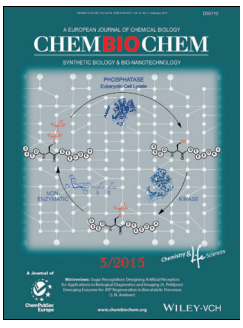
W. Guo, Q. Wang, Y. Luan, G. Wang,* W. Dong, J. Yu

Fabrication of Hierarchical Fe_3O_4@SiO_2@P(4VP-DVB)@Au Nanostructures and Their Enhanced Catalytic Properties

Gold digger: A poly(4-vinylpyridine) (P4VP) shell was coated on core–shell Fe_3O_4@SiO_2 nanospheres followed by in situ embedding of gold nanoparticles homogeneously into the P4VP chains to obtain the nanocatalyst (see figure). The P4VP shell, easily swollen by the reactants, made the embedded gold nanoparticles easily accessible to the reactants and prevented them from coagulating.



Chem. Asian J.
DOI: **10.1002/asia.201403251**

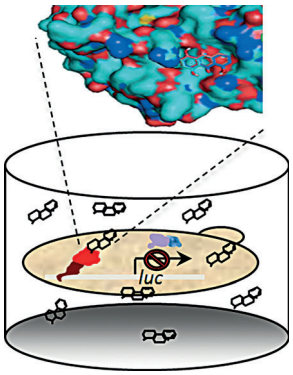


Protein–Protein Interactions

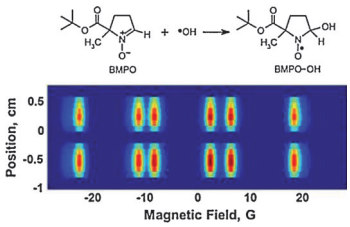
A. Hamdi, A. Lesnard, P. Suzanne, T. Robert, M. A. Miteva, M. Pellerano, B. Didier, E. Ficko-Blean, A. Lobstein, M. Hibert, S. Rault, M. C. Morris, P. Colas*

Tampering with Cell Division by Using Small-Molecule Inhibitors of CDK–CKS Protein Interactions

Two small-molecule inhibitors of CDK–CKS protein interactions were discovered. They bind to CDK2 and they do not inhibit its kinase activity. They inhibit the proliferation of tumor cell lines. They cause a decrease in CDK2/cyclin A and $p27^{Kip1}$ expression levels.



ChemBioChem
DOI: **10.1002/cbic.201402579**



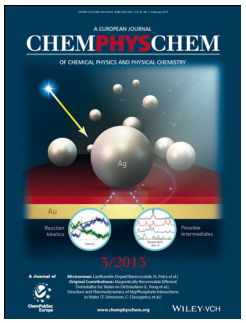
ChemPhysChem
DOI: **10.1002/cphc.201402835**

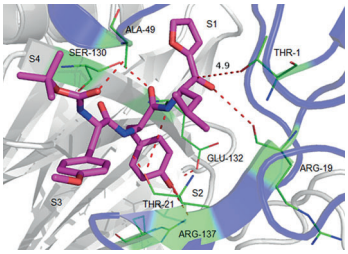
Imaging Techniques

J. R. Biller, M. Tseitlin, D. G. Mitchell, Z. Yu, L. A. Buchanan, H. Elajaili, G. M. Rosen, J. P. Y. Kao, S. S. Eaton, G. R. Eaton*

Improved Sensitivity for Imaging Spin Trapped Hydroxyl Radical at 250 MHz

Three's a charm: Reactive oxygen species can be detected by spin trapping. Previously high detection limits at the low frequencies required for in vivo EPR imaging are dramatically reduced by combining three enabling technologies: the spin-trap BMPO, rapid-scan EPR and a new image reconstruction algorithm, and demonstrated by a 2D spectral spatial image of 5 μM BMPO–OH.





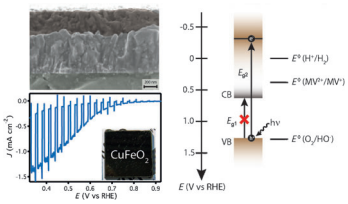
ChemMedChem
DOI: **10.1002/cmdc.201402484**

Antitumor Agents

Q. Sun, B. Xu, Y. Niu,* F. Xu, L. Liang, C. Wang, J. Yu, G. Yan, W. Wang, H. Jin,* P. Xu*

Synthesis, Bioactivity, Docking and Molecular Dynamics Studies of Furan-Based Peptides as 20S Proteasome Inhibitors

Sweet 17 vs. 20S: Seventeen furan-based peptidic molecules were designed and synthesized as 20S proteasome inhibitors, some of which showed potency and selectivity for the β5 subunit in both enzymatic and cell-based assays. Good antineoplastic activities were observed in multiple tumor cell lines. Docking and molecular dynamics simulations were also used to confirm a noncovalent binding mode.



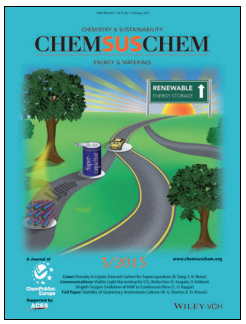
ChemSusChem
DOI: **10.1002/cssc.201403146**

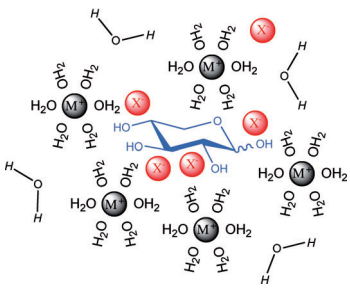
Water Splitting

M. S. Prévot, N. Guijarro, K. Sivula*

Enhancing the Performance of a Robust Sol–Gel-Processed p-Type Delafossite $CuFeO_2$ Photocathode for Solar Water Reduction

Make the cut: Inexpensive and facile processing aid optimization and allow for insights into the limitations of delafossite $CuFeO_2$, which is a promising material for photoelectrochemical energy conversion. A sol–gel-based technique to prepare thin films of p-type delafossite $CuFeO_2$ on fluorine-doped tin oxide (FTO) glass is described.





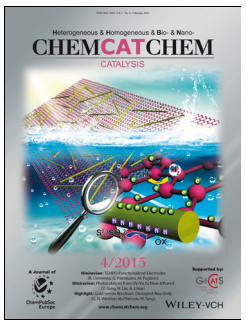
ChemCatChem
DOI: **10.1002/cctc.201402842**

Biomass Conversion

K. R. Enslow, A. T. Bell*

The Role of Metal Halides in Enhancing the Dehydration of Xylose to Furfural

Get your kicks from kinetics: The effect of metal halides on the mechanism and kinetics of xylose dehydration in aqueous solution have been investigated. We found that both the rate of xylose consumption and furfural selectivity are affected by the nature of the salt cation and anion pairing.

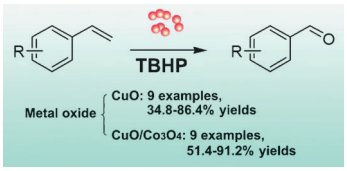


Heterogeneous Catalysis

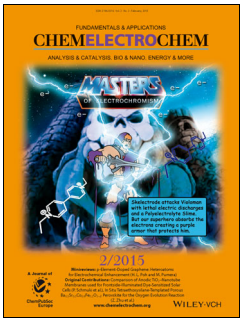
D. Ge, J. Wang, H. Geng, S. Lu, D. Wang, X. Li, X. Zhao, X. Cao,* H. Gu*

Facile Synthesis of Copper-Based Metal Oxide Nanoparticles with Exceptional Catalytic Activity for the Selective Oxidation of Styrenes into Benzaldehydes

Talkin′ about our generation: Copper-based metal oxide (CuO, CuO/Co_3O_4) nanoparticles have been synthesized from coordination-driven self-assembling aggregates and calcination treatment. They exhibited exceptional catalytic activity and stability for the selective oxidation of styrene and its derivatives to generate the corresponding aldehydes (see figure; TBHP = *tert*-butyl hydroperoxide).



ChemPlusChem
DOI: **10.1002/cplu.201402319**



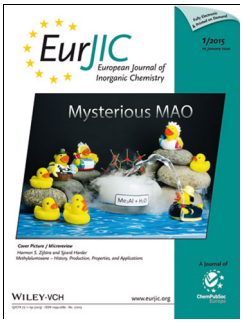
Graphene

H. L. Poh, M. Pumera*

p-Element-Doped Graphene: Heteroatoms for Electrochemical Enhancement

Process matters: Doping of graphene with heteroatoms, namely boron, nitrogen, phosphorus, sulfur, fluorine, chlorine, bromine, and iodine, changes its electrochemical properties. Here, the different routes currently available for doping are discussed, and the influence upon the electrochemical properties of such materials is shown.

ChemElectroChem
DOI: **10.1002/celc.201402307**

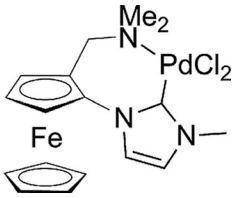


N-Heterocyclic Carbene Complexes

P. Loxq, J.-C. Daran, E. Manoury, R. Poli, A. Labande*

Bifunctional N-Heterocyclic Carbene Ferrocenyl Ligands – Synthesis and Palladium(II) Complexes

Two ferrocenylimidazolium tetrafluoroborate salts, precursors of new ferrocenylimidazol-2-ylidene bifunctional ligands, and the corresponding palladium(II) complexes have been prepared for the first time.



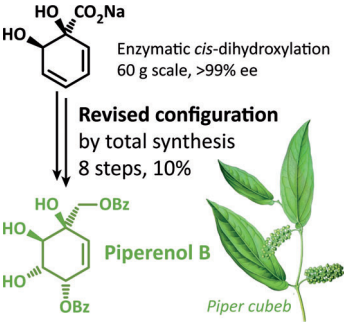
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201403001**

Natural Product Synthesis

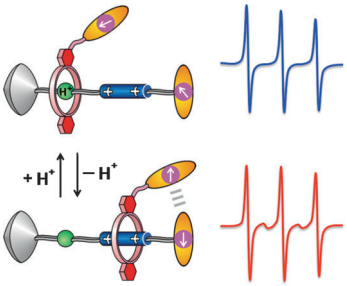
T. C. Fischer, B. Cerra, M. J. Fink, F. Rudroff, E. Horkel, M. D. Mihovilovic*

First Total Synthesis of Piperenol B and Configuration Revision of the Enantiomers Piperenol B and Uvarirufol A

The first total synthesis of piperenol B, a polyoxygenated cyclohexene natural product from *Piper cubeb*, has been developed starting with the multi-ten-gram scale enzymatic dihydroxylation of sodium benzoate. The originally predicted absolute configurations of piperenol B and its enantiomer uvarirufol A were eventually revised based on this synthesis and NMR analysis of late-stage Mosher's esters.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201403582**



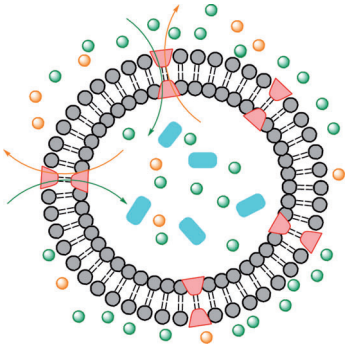
Molecular Machines

V. Bleve, C. Schäfer, P. Franchi, S. Silvi, E. Mezzina,* A. Credi,* M. Lucarini*

Reversible Mechanical Switching of Magnetic Interactions in a Molecular Shuttle

It's shuttle time! We developed an acid–base switchable molecular shuttle based on a [2]rotaxane, incorporating stable radical units in both the ring and dumbbell components. The interaction between the radicals can be reversibly switched from uncoupled (upon acid addition) to coupled (upon base addition). Hence, this molecular machine is capable of switching on/off magnetic interactions by chemically driven reversible mechanical effects.

ChemistryOpen
DOI: **10.1002/open.201402073**



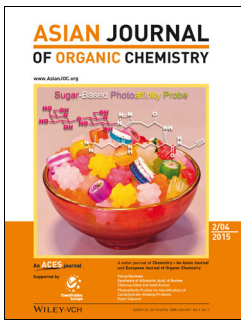
Ion Transport

R. Zappacosta, A. Fontana,* A. Credi, A. Arduini, A. Secchi*

Incorporation of Calix[6]Arene Macrocycles and (Pseudo)Rotaxanes in Bilayer Membranes: Towards Controllable Artificial Liposomal Channels

Hitchin' a chlo-ride: The role of calix[6]arene-based pseudorotaxanes and rotaxanes on transmembrane transport of ions such as chloride and 5(6)-carboxyfluorescein across the bilayer of liposomes composed of 1-palmitoyl-2-oleoyl-sn-glycero-3-phosphocholine (diameter 100 nm) was investigated. The findings may pave the way for the construction of new generations of pharmacological systems regulating the transport of chloride ions.

Asian J. Org. Chem.
DOI: **10.1002/ajoc.201402244**



Chemical Societies

C. Oger, G. Chatel

French Young Chemists' Network Created

The newly formed *Réseau des Jeunes Chimistes de la SCF* (RJ-SCF, French Young Chemists' Network) aims to achieve stronger involvement and more visibility for young researchers. They plan to organize scientific meetings and promote chemistry to the general public.

ChemViews magazine
DOI: **10.1002/chemv.201400139**