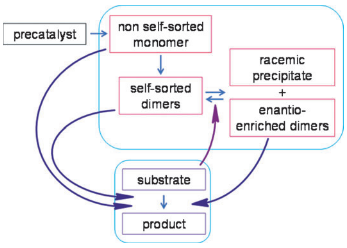
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Asymmetric Hydrogenation

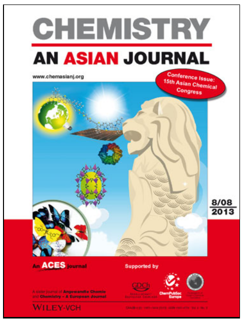
F. G. Terrade, M. Lutz, J. N. H. Reek*

Ligand Self-Sorting and Nonlinear Effects in Dinuclear Asymmetric Hydrogenation: Complexity in Catalysis

Self-sorting species: Nonlinear effects are observed in asymmetric hydrogenation reactions if self-sorted dinuclear complexes are generated. The nature of the substrate also influences this effect, because it affects the solubility of racemic self-sorted homochiral dinuclear complexes (see scheme).



Chem. Eur. J.
DOI: **10.1002/chem.201301966**

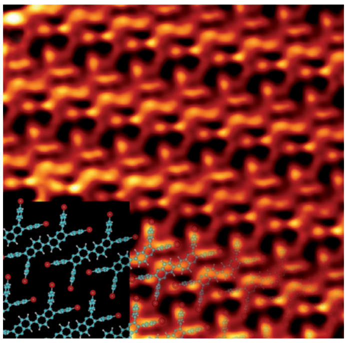


Self-Assembly

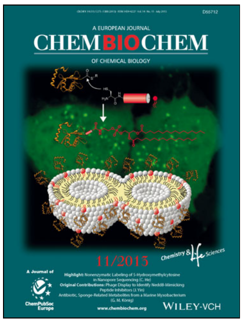
M. El Garah,* J. Lipton-Duffin, J. M. MacLeod, R. Gutzler, F. Palmino, V. Luzet, F. Chérioux, F. Rosei*

Self-Assembly of a Halogenated Molecule on Oxide-Passivated Cu(110)

Passive resistance: The supramolecular self-assembly of halogenated molecules is achieved on an oxide-passivated Cu(110) surface by tuning the molecule–surface interactions. The Cu(110)–O(2×1) oxygen atoms do not undergo Ullmann cross-coupling reactions, although this reaction is catalyzed by a bare Cu surface, instead suppressing molecule–molecule interactions.



Chem. Asian J.
DOI: **10.1002/asia.201300283**

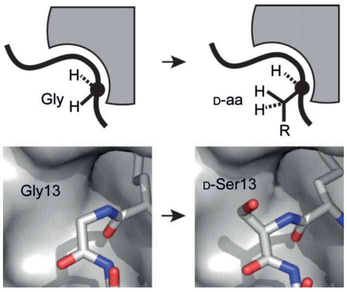


Amino Acids

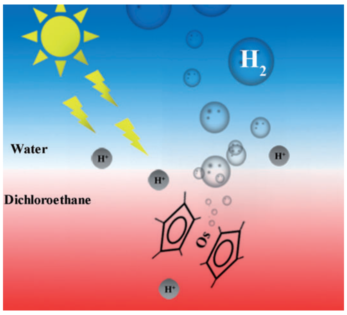
S. Chen, D. Gfeller, S. A. Buth, O. Michielin, P. G. Leiman, C. Heinis*

Improving Binding Affinity and Stability of Peptide Ligands by Substituting Glycines with D-Amino Acids

A positive angle on mutations: Glycines can adopt positive ϕ dihedral angles that are not preferred by other natural amino acids but can be obtained by D-amino acids. We propose that mutation of glycine to D-amino acids in natural or in vitro evolved peptide ligands is a promising strategy to enhance binding affinity and/or stability.



ChemBioChem
DOI: **10.1002/cbic.201300228**



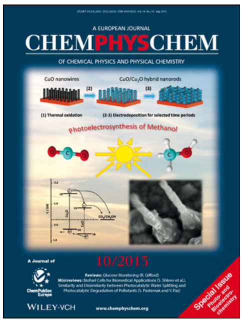
Electrochemistry

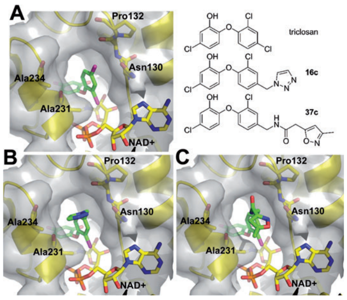
P. Ge, A. J. Olaya, M. D. Scanlon, I. Hatay Patir, H. Vrubel, H. H. Girault*

Photoinduced Biphasic Hydrogen Evolution: Decamethylosmocene as a Light-Driven Electron Donor

A weak but productive donor: Mechanistic and kinetic insights into light-driven biphasic hydrogen evolution in the presence of the weak electron donor decamethylosmocene , which on white-light illumination produces an excited-state species that can reduce organically solubilized protons (see picture), are obtained by gas chromatographic, cyclic voltammetric, and UV/Vis and ^{1}H NMR spectroscopic analysis.

ChemPhysChem
DOI: **10.1002/cphc.201300122**





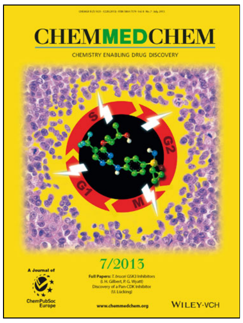
Antiprotozoal Agents

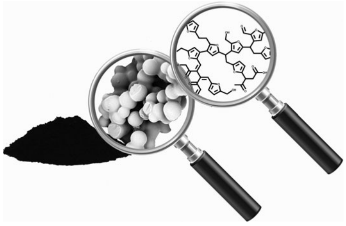
J. Stec, A. Fomovska, G. A. Afanador, S. P. Muench, Y. Zhou, B.-S. Lai, K. El Bissati, M. R. Hickman, P. J. Lee, S. E. Leed, J. M. Auschwitz, C. Sommervile, S. Woods, C. W. Roberts, D. Rice, S. T. Prigge, R. McLeod,* A. P. Kozikowski*

Modification of Triclosan Scaffold in Search of Improved Inhibitors for Enoyl-Acyl Carrier Protein (ACP) Reductase in *Toxoplasma gondii*

Crystal structures of the *Tg*ENR–NAD$^+$–triclosan complex (A) with docked compounds **16c** (B) and **37c** (C): The latter two compounds have high potency, improved physicochemical properties, and lower toxicity than triclosan. Two new hydrogen bonding interactions with the surrounding *Tg*ENR residues are likely to be decisive for the high inhibitory activity of **16c**. Compound **37c** is bulkier, but binds in the same manner as triclosan.

ChemMedChem
DOI: **10.1002/cmdc.201300050**





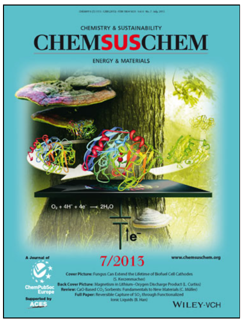
Biomass Conversion

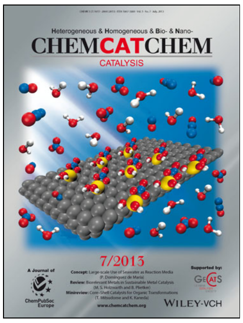
I. van Zandvoort, Y. Wang, C. B. Rasrendra, E. R. H. van Eck, P. C. A. Bruijnincx,* H. J. Heeres,* B. M. Weckhuysen*

Formation, Molecular Structure, and Morphology of Humins in Biomass Conversion: Influence of Feedstock and Processing Conditions

Under scrutiny: Humin byproducts formed during the acid-catalyzed dehydration of sugars are analyzed with multiple techniques to reveal a furan-rich network formed via hydroxymethylfurfural (see picture). Within this network, the aliphatic linkages and oxygen functionalities strongly depend on the feedstock. A representative model for the molecular structure of humins is proposed.

ChemSusChem
DOI: **10.1002/cssc.201300332**



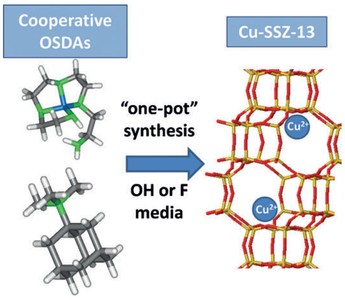

CHEMCATCHEM
CATALYSIS
7/2013
WILEY-VCH

Zeolites

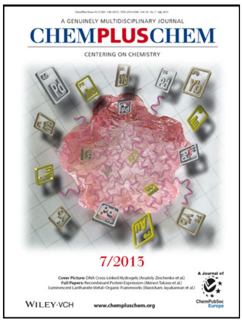
R. Martínez-Franco, M. Moliner,* J. R. Thogersen, A. Corma*

Efficient One-Pot Preparation of Cu-SSZ-13 Materials using Cooperative OSDAs for their Catalytic Application in the SCR of NO_x

An adamant director! The direct synthesis of Cu-SSZ-13 zeolites with controlled Si/Al ratios and extra-framework cationic Cu species is performed by combining the use of a Cu complex and *N*,*N*,*N*-trimethyl-1-adamantammonium as organic structure-directing agents (OSDAs). Cu-SSZ-13 materials synthesized by using this "one-pot" methodology demonstrate excellent catalytic activities and good hydrothermal stabilities for the selective catalytic reduction of NO_x.



ChemCatChem
DOI: **10.1002/cctc.201300141**

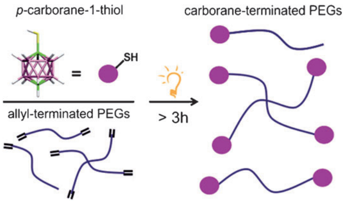

A GENUINELY MULTIDISCIPLINARY JOURNAL
CHEMPLUSCHEM
CENTERING ON CHEMISTRY
7/2013
WILEY-VCH

Telechelic Carboranes

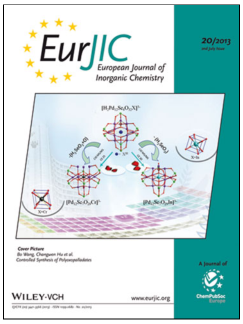
P. Matějíček,* M. Uchman, M. Lepšík, M. Srnec, J. Zedník, P. Kozlík, K. Kalíková

Preparation and Separation of Telechelic Carborane-Containing Poly(ethylene glycol)s

Off the PEG: The first example of thiol/ene coupling of carboranes leads to telechelic poly(ethylene glycol)s (PEGs, see figure). The radical stability and the reaction mechanism have been checked by quantum chemical calculations. The raw products are separated by advanced chromatography techniques.



ChemPlusChem
DOI: **10.1002/cplu.201300046**

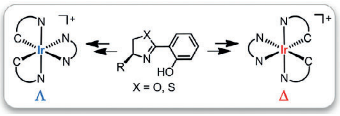

EurJIC
European Journal of Inorganic Chemistry
20/2013
WILEY-VCH

Chiral Iridium(III) Complexes

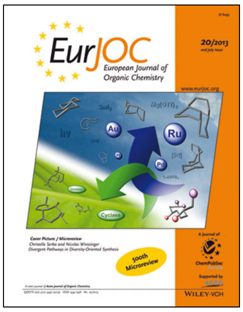
M. Helms, Z. Lin, L. Gong, K. Harms, E. Meggers*

Method for the Preparation of Nonracemic Bis-Cyclometalated Iridium(III) Complexes

By utilizing chiral auxiliaries, a practical strategy for the generation of enantiomerically pure bis-cyclometalated Ir^{III} complexes was developed. The method relies on the synthesis and subsequent chromatographic separation of diastereomeric complexes followed by substitution of the auxiliaries with polypyridyl ligands with complete retention of configuration.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201300411**

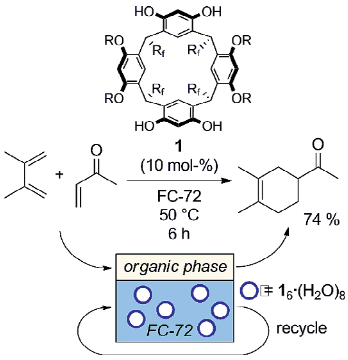

EurJOC
European Journal of Organic Chemistry
20/2013
WILEY-VCH

Supramolecular Chemistry

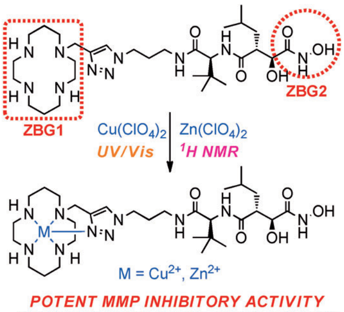
S. Shimizu,* A. Usui, M. Sugai, Y. Suematsu, S. Shirakawa, H. Ichikawa

Hexameric Capsule of a Resorcinarene Bearing Fluorous Feet as a Self-Assembled Nanoreactor: A Diels–Alder Reaction in a Fluorous Biphasic System

A Diels–Alder reaction in a fluorous biphasic system was accelerated by a hexameric capsule of resorcinarene bearing fluorous feet. The reaction took place predominantly within the capsule, which could be recovered as a fluorous solution and recycled after simple decantation. This new tool provides the possibility of a new catalytic process through supramolecular catalysis. R_f = fluorinated alkyl group, FC-72 = perfluorohexane.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201300652**



POTENT MMP INHIBITORY ACTIVITY WITHOUT SIGNIFICANT CYTOTOXICITY

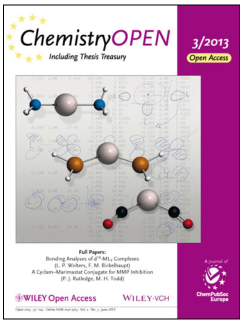
Enzyme Inhibitors

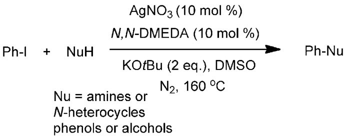
M. Yu, N. H. Lim, S. Ellis, H. Nagase, J. A. Triccas, P. J. Rutledge,* M. H. Todd*

Incorporation of Bulky and Cationic Cyclam-Triazole Moieties into Marimastat Can Generate Potent MMP Inhibitory Activity without Inducing Cytotoxicity

Choices, choices: A conjugate of cyclam and the matrix metalloproteinase (MMP) inhibitor marimastat was synthesized to give a compound with two potential zinc-binding groups (ZBGs). The first equivalent of Cu(II) or Zn(II) was chelated by the cyclam-triazole moiety rather than the hydroxamic acid. Both the conjugate and its metal complexes exhibited potent and selective MMP inhibitory activity, and displayed no cytotoxicity, suggesting future applications in the imaging of MMP activity.

ChemistryOpen
DOI: **10.1002/open.201300014**





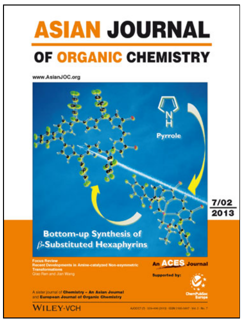
N-*Arylation*

R. Das, M. Mandal, D. Chakraborty*

Silver-Nitrate-Catalyzed *N*-Arylation of Amines and *O*-Arylations of Phenols and Alcohols

Silver service: An efficient and general protocol for intermolecular C–N and C–O cross-coupling of amines, alcohols, and phenols with halides by using AgNO$_3$ as the catalyst and *N,N*-dimethylethylenediamine (*N,N*-DMEDA) as a ligand along with KO*t*Bu as base is described.

Asian J. Org. Chem.
DOI: **10.1002/ajoc.201300074**



Chemical Synergies

David Bradley

Reuniting Chemical Disciplines, Separated at Birth

For a time in scientific history, multidisciplinarity was all there was. Now we study the sub-disciplines in isolation. David Bradley, UK, discusses H. Kunz' and K. Müllen's, Max Planck Institute for Polymer Research, Germany, assertion that researchers in some sub-disciplines have lost sight of the mutual underpinnings of the different fields and potential interplay with other scientific niches is missed.

ChemViews magazine
DOI: **10.1002/chemv.201300079**