

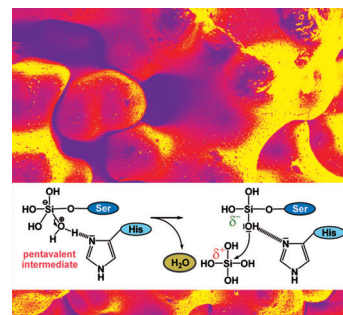


Bioinorganic Chemistry

W. E. G. Müller,* H. C. Schröder, Z. Burghard, D. Pisignano, X. Wang*

Silicateins—A Novel Paradigm in Bioinorganic Chemistry: Enzymatic Synthesis of Inorganic Polymeric Silica

From gene to enzyme to inorganic polymer: The elucidation of bioinorganic reactions that catalyze the formation of an inorganic polymer from inorganic monomeric substrates, here the synthesis of the biosilica matrix of the sponge skeleton by the enzyme silicatein, resulted in a paradigm shift. This progress opened new horizons in the application field of bionanotechnology (opto-electronics) and even in biomedicine (bone/tissue engineering).



Chem. Eur. J.
DOI: 10.1002/chem.201204412

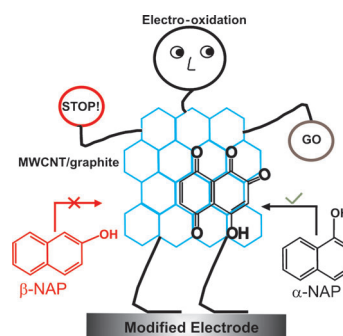


Electrocatalysis

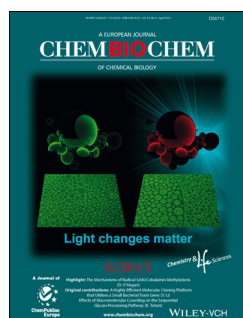
P. Swetha, A. S. Kumar*

Selective Electrochemical Recognition of the α -Naphthol Isomer and In Situ Immobilization of Naphthoquinones for Tunable Electrocatalysis

Fits like a glove: Separationless and selective electrochemical oxidation of the α -naphthol (α -NAP) isomer yields naphthoquinone species on the surface of multiwalled carbon nanotubes, which can further catalyze the electro-oxidation of NADH and hydrazine at different potentials. The β -NAP isomer failed to show any such electro-oxidation.



Chem. Asian J.
DOI: 10.1002/asia.201201170

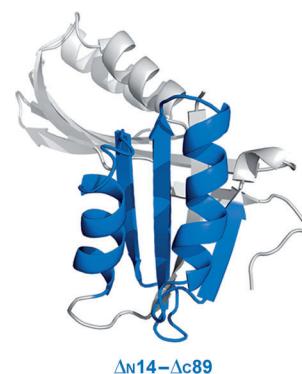


Protein–Protein Interactions

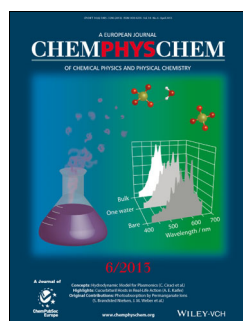
Y. Zhao, C. Niu, X. Wen, Z. Xi*

The Minimum Activation Peptide from ilvH Can Activate the Catalytic Subunit of AHAS from Different Species

Small but active: The minimum-length activation peptide $\Delta_{N14}-\Delta_{C89}$ from ilvH can activate the catalytic subunit of acetohydroxyacid synthases (AHASs) from *E. coli*, *A. thaliana*, *S. cerevisiae*, and *N. plumbaginifolia*. The high sequence similarity between $\Delta_{N14}-\Delta_{C89}$ and the regulatory subunits (RSUs) of AHAS across various species hints that this peptide represents the minimum activation motif in the RSU.



ChemBioChem
DOI: 10.1002/cbic.201200680

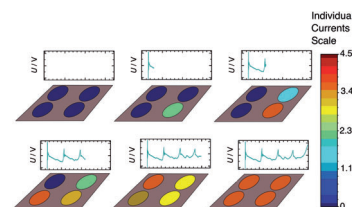


Microelectrodes

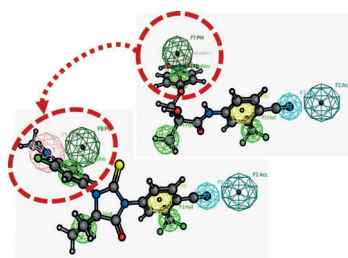
D. A. Crespo-Yapur, A. Bonnefont,* R. Schuster, K. Krischer, E. R. Savinova

Cooperative Behaviour of Pt Microelectrodes during CO Bulk Electrooxidation

Cooperative behaviour of an array of microelectrodes: The interplay of bistable reaction kinetics with global coupling results in a spontaneous sequential activation of electrodes when the applied current is increased.



ChemPhysChem
DOI: 10.1002/cphc.201300105



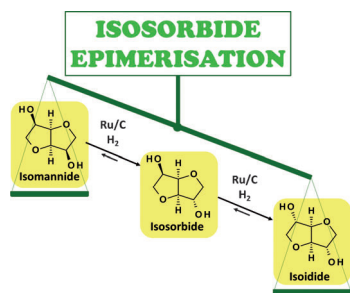
ChemMedChem
DOI: 10.1002/cmdc.201200549

Virtual Drug Design

A. Voet, C. Helsen, K. Y. J. Zhang,* F. Claessens

The Discovery of Novel Human Androgen Receptor Antagonist Chemotypes Using a Combined Pharmacophore Screening Procedure

A new tack altogether: Using structural information for human androgen receptor (hAR) antagonists in an agonistic conformation, a pharmacophore query was constructed for the agonistic and antagonistic conformations. A homology model of hAR in an antagonistic conformation was created. These models were combined for virtual screening to identify pure antagonists, which were experimentally confirmed.



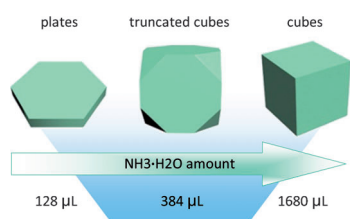
ChemSusChem
DOI: 10.1002/cssc.201200714

Renewables

J. Le Nôtre, J. van Haveren, D. S. van Es*

Synthesis of Isoidide through Epimerization of Isosorbide using Ruthenium on Carbon

The thermodynamic scale: Isoidide, the most attractive isohexide isomer for polymer synthesis, is obtained as the major product through the epimerization of isosorbide with a ruthenium-on-carbon catalyst under a relatively low pressure of hydrogen. The catalyst can be recycled, and isomannide and the unreacted isosorbide can be reused in further experiments, making this process highly atom efficient.



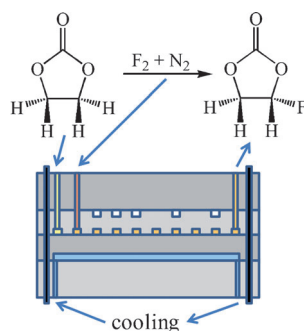
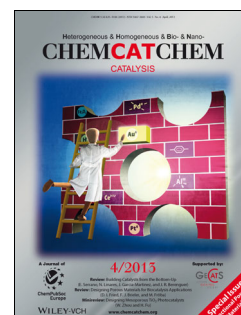
ChemCatChem
DOI: 10.1002/cctc.201200629

Nanocatalysis

H. Wang, Y. Liu, P. Hu, L. He, J. Li,* L. Guo*

AgBr Nanocrystals from Plates to Cubes and Their Photocatalytic Properties

Crystal evolution: AgBr nanocrystals, evolving from plates through truncated cubes and finally to regular cubes, corresponding to a progressive shrinkage of exposed {111} facets and enlargement of exposed {100} facets, are prepared and their growth mechanism investigated. These nanocrystals exhibit facet-dependent photocatalytic properties.



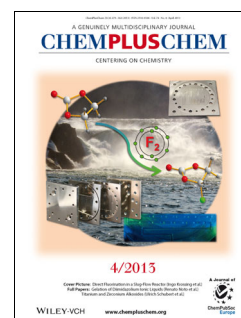
ChemPlusChem
DOI: 10.1002/cplu.201200267

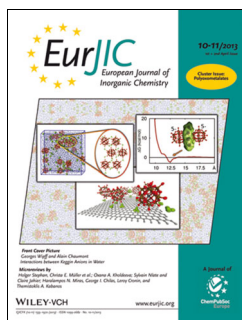
Flow Reactors

M. Hill, P. Baron, K. Cobry, S. K. Goll, P. Lang, C. Knapp, H. Scherer, P. Woias, P. Zhang, I. Krossing*

Direct Fluorination of Cyclic Carbonates and *closo*-K₂[B₁₂H₁₂] in a Slug-Flow Ministructured Reactor

A novel multiphase minireactor was used for direct fluorination of ethylene carbonate, propylene carbonate, and *closo*-K₂[B₁₂H₁₂]. The results of the direct fluorination reactions are presented and calculated Gibbs free energies for the cyclic carbonates are discussed. It followed that cyclic carbonates are also possible solvents for the fluorination of ionic substrates, for example *closo*-K₂[B₁₂H₁₂]. The figure shows a schematic view of the reactor and its function.





Chalcogenide Clusters

A. L. Gushchin, R. Llusar,* C. Vicent,* P. A. Abramov,
C. J. Gómez-García

Mo_3Q_7 (Q = S, Se) Clusters Containing Dithiolate/Diselenolate
Ligands: Synthesis, Structures, and Their Use as Precursors of
Magnetic Single-Component Molecular Conductors

Scrambling between the chalcogen atoms of the Mo_3Se_7 cluster unit
and the sulfur atoms of dithiolene ligands can be avoided by appropri-
ate selection of the reaction conditions (solvent, temperature) to
afford well-defined dithiolene Mo_3Se_7 anions that could serve as pre-
cursors of magnetic molecular conductors.



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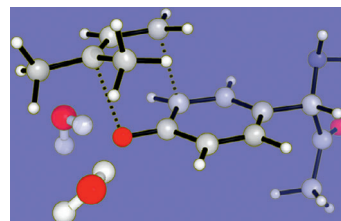


Solvents and Rearrangement

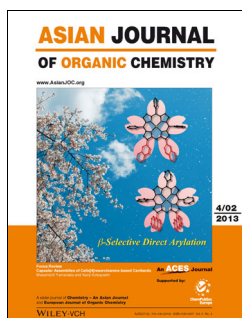
S. Osuna, S. Kim, G. Bollot, K. N. Houk*

Aromatic Claisen Rearrangements of O-Prenylated Tyrosine and Model
Prenyl Aryl Ethers: Computational Study of the Role of Water on
Acceleration of Claisen Rearrangements

LynF, an enzyme from the TruF family, O-prenylates tyrosines in pro-
teins, with subsequent Claisen rearrangements giving C-prenylated tyro-
sine products. These reactions in tyrosines and model phenolic systems
have been explored with DFT and SCS-MP2 calculations. Solvent effects
from water were considered using implicit and explicit models.



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DOI: 10.1002/ejoc.201201738

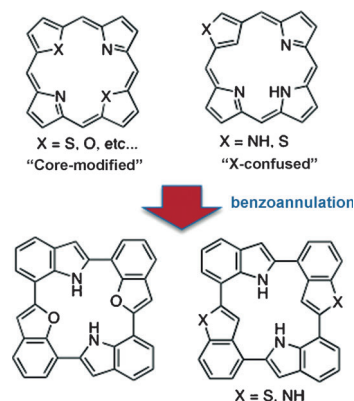


Porphyrin Analogues

S. Nakamura, T. Kondo, S. Hiroto,* H. Shinokubo*

Porphyrin Analogues That Consist of Indole, Benzofuran, and
Benzothiophene Subunits

Switching to analogue: We have designed and synthesized porphyrin
analogues that consist of benzofuran, benzothiophene, and indole
subunits. These cyclic benzoheterole tetramers were more stable in air
and have more planar structures than the corresponding cyclic tetra-
indole. Photophysical and theoretical investigations revealed effective π -
conjugation over the macrocyclic systems.



Asian J. Org. Chem.
DOI: 10.1002/ajoc.201300033



Virtual Event

Vera Köster

Angewandte Chemie Celebrates 125 Years

1500 people participated in the Angewandte Symposium in Berlin.
They were joined by more than 3500 people around the globe via its
live broadcast. Some gathered to create their own mini event to listen
to the high-caliber talks by, e.g., Roald Hoffmann and Ahmed Zewail.
ChemViews magazine presents highlights of this exciting and inspiring
day and gives you the opportunity to watch it.



ChemViews magazine
DOI: 10.1002/chemv.201300038