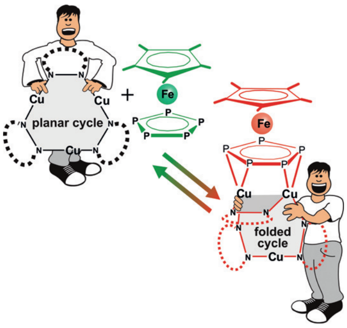
Auf diesen Seiten weisen wir auf wichtige aktuelle Beiträge in unseren Schwesterzeitschriften hin. Wenn Sie die Seiten online lesen, dann können Sie die Artikel mit einem Klick direkt aufrufen, ansonsten sind sie durch Eingabe der DOIs über Wiley Online Library leicht online zugänglich.

Coordination Chemistry

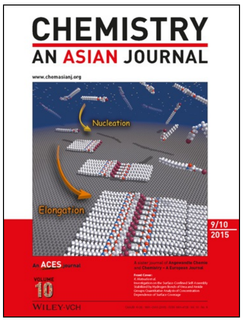
O. A. Filippov, A. A. Titov, E. A. Guseva, D. A. Loginov, A. F. Smol'yakov, F. M. Dolgushin, N. V. Belkova, L. M. Epstein, E. S. Shubina*

Remarkable Structural and Electronic Features of the Complex Formed by Trimeric Copper Pyrazolate with Pentaphosphaferrocene

Know how to fold'em: The interaction of pentaphosphaferrocene [Cp*Fe(η^5-P_5)] with trimeric copper pyrazolate [(Cu{3,5-$(CF_3)_2$Pz})$_3$] yields the new compound [Cp*Fe(μ_3-η^5:η^2,η^2-P_5){Cu(3,5-$(CF_3)_2$Pz)}$_3$], which is astonishingly stable in solution and exhibits unprecedented structural changes in the interacting molecules. As a result of the 90° macrocycle folding, the copper atoms are able to behave as both Lewis acid and Lewis base in the interaction with the cyclo-P_5 ligand.



Chem. Eur. J.
DOI: **10.1002/chem.201502085**

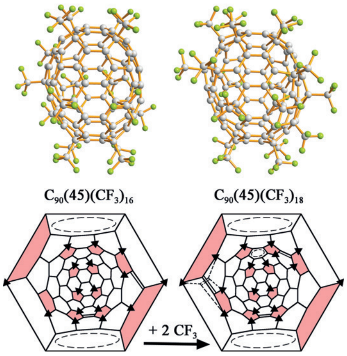


Fullerenes

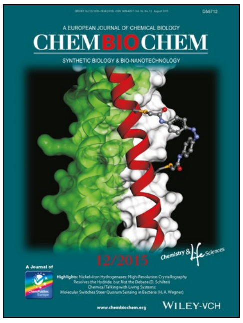
N. B. Tamm, S. I. Troyanov*

Capturing C_{90} Isomers as CF_3 Derivatives: $C_{90}(30)(CF_3)_{14}$, $C_{90}(35)(CF_3)_{16/18}$, and $C_{90}(45)(CF_3)_{16/18}$

The most stable isomer of C_{90} fullerene, C_2-$C_{90}(45)$, has been captured for the first time as $C_{90}(45)(CF_3)_{16/18}$ by high-temperature trifluoromethylation of a C_{90} isomeric mixture followed by HPLC separation and X-ray diffraction. Three other CF_3 derivatives of the previously known C_{90} isomers, $C_{90}(30)(CF_3)_{14}$ and $C_{90}(35)(CF_3)_{16/18}$, have been also structurally characterized by single crystal X-ray study with the use of synchrotron radiation.



Chem. Asian J.
DOI: **10.1002/asia.201500521**

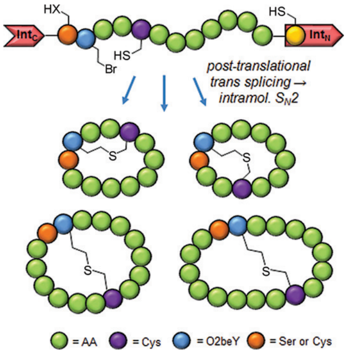


Bicyclic Peptides

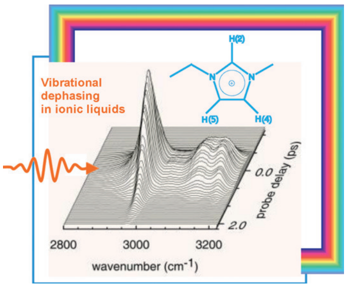
N. Bionda, R. Fasan*

Ribosomal Synthesis of Natural-Product-Like Bicyclic Peptides in *Escherichia coli*

Ringing up peptides: The combination of split intein-mediated peptide circularization with intramolecular crosslinking through a genetically encoded, cysteine-reactive amino acid (O2beY) provides a versatile strategy to produce structurally diverse bicyclic peptides in bacterial cells. By using this approach, a bicyclic peptide with enhanced binding affinity for streptavidin was isolated.



ChemBioChem
DOI: **10.1002/cbic.201500179**



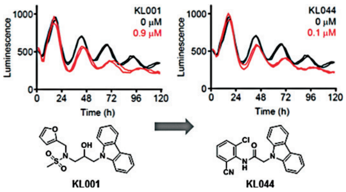
Vibrational Dephasing

S. Chatzipapadopoulos, T. Zentel, R. Ludwig,* M. Lütgens,
S. Lochbrunner,* O. Kühn*

Vibrational Dephasing in Ionic Liquids as a Signature of Hydrogen Bonding

Fast CARS: Hydrogen Bonding governs the vibrational dephasing in imidazolium ionic liquids. Combined time-resolved coherent anti-Stokes Raman scattering (CARS) and theoretical studies show that this process takes place on the fs-to-ps timescale and that dephasing is faster for C—H bonds that are involved in H bonds. Surprisingly, the fast dephasing and lifetimes reflect the behavior of macroscopic properties, such as viscosities and NMR relaxation times.

ChemPhysChem
DOI: **10.1002/cphc.201500433**



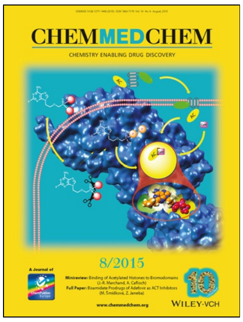
Drug Design

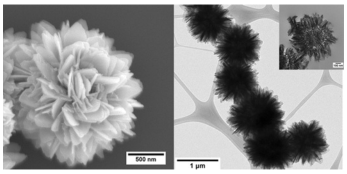
J. W. Lee, T. Hirota,* A. Kumar,* N.-J. Kim, S. Irle, S. A. Kay*

Development of Small-Molecule Cryptochrome Stabilizer Derivatives as Modulators of the Circadian Clock

Circadian modulators: An extensive SAR study of KL001, a stabilizer of the clock protein CRY, resulted in the development of a highly active derivative, KL044. Subsequent 3D-QSAR analysis provided molecular-level understanding of the regulatory mechanism of CRY function. KL044 is a powerful chemical tool to control circadian rhythms by targeting CRY.

ChemMedChem
DOI: **10.1002/cmdc.201500260**





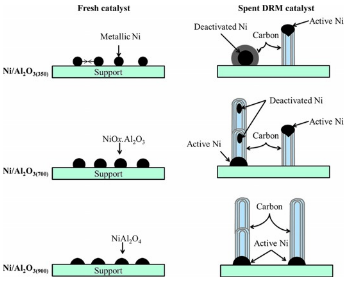
Lithium-Ion Batteries

L. Wang, Y. Zhang, M. E. Scofield, S. Yue, C. McBean,
A. C. Marschilok, K. J. Takeuchi, E. S. Takeuchi, S. S. Wong*

Enhanced Performance of “Flower-like” $Li_4Ti_5O_{12}$ Motifs as Anode Materials for High-Rate Lithium-Ion Batteries

Stop and smell the flowers: 3 D hierarchical flower-shape $Li_4Ti_5O_{12}$ motifs are synthesized by using a facile and rapid hydrothermal process involving short reaction times, relatively low reaction temperatures, and reusable and recyclable Ti precursors. The resulting $Li_4Ti_5O_{12}$ electrodes exhibit remarkably high rate capability and cycling stability as compared with analogous, previously reported motifs.

ChemSusChem
DOI: **10.1002/cssc.201500639**



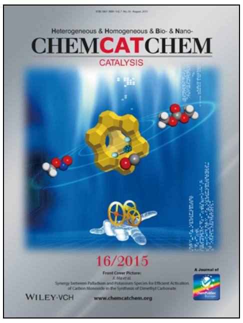
Dry Reforming

L. Zhou, L. Li, N. Wei, J. Li, K. Takanabe, J.-M. Basset*

Effect of $NiAl_2O_4$ Formation on Ni/Al_2O_3 Stability during Dry Reforming of Methane

Onions, chains, and filaments: The nickel reduced from $NiAl_2O_4$ showed an excellent performance against sintering and coking during a long-term dry reforming of methane (DRM) reaction. Various types of carbon deposition were observed for catalysts calcined at different temperatures.

ChemCatChem
DOI: **10.1002/cctc.201500379**

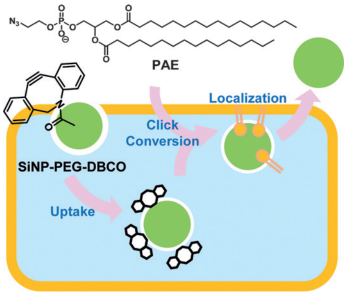


Intracellular Behavior

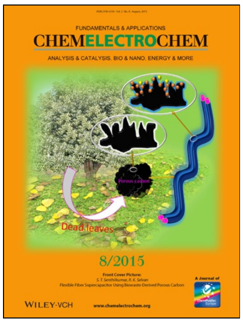
T. Ito,* T. Nakamura, E. Kusaka, R. Kurihara, K. Tanabe*

Controlling Localization and Excretion of Nanoparticles by Click Modification of the Surface Chemical Structures inside Living Cells

Click and release: Silica nanoparticles (SiNPs) with a cyclooctyne structure on the surface are suitable for click modification with azido-phospholipids in living cells. Click conversion of the surface groups induces localization of nanoparticles on the cell membrane and enhances excretion of nanoparticles from the cells (see figure; PEG = polyethylene glycol, DBCO = dibenzocyclooctyne, PAE = phosphatidyl azidoethanol).



ChemPlusChem
DOI: **10.1002/cplu.201402436**

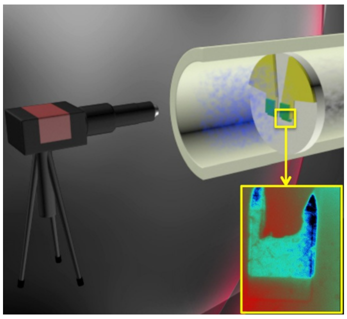


In Situ Monitoring

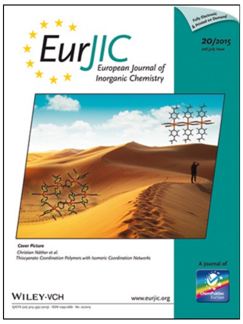
A. Geller, M. Pomfret, D. A. Steinhurst, Y. Yu, Z. Liu, J. C. Owrutsky,* B. W. Eichhorn*

Operando Tracking of Electrochemical Activity in Solid Oxide Electrochemical Cells by Using Near-Infrared Imaging

Excuse me, I'm NIR-sighted: Redox processes on a ceria-based solid oxide electrochemical cell (SOC) are studied by near-infrared (NIR) imaging (see figure) and ambient pressure X-ray photoelectron spectroscopy (APXPS). The two techniques prove to be complimentary for tracking ceria redox changes and elucidating mechanistic details on an operating SOC.



ChemElectroChem
DOI: **10.1002/celc.201500150**

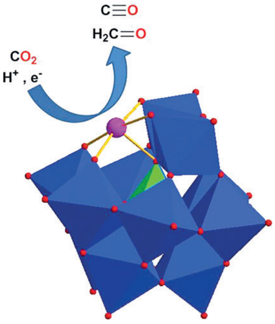


Polyoxometalates

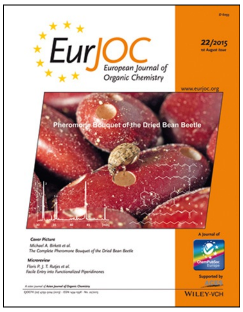
M. Girardi, S. Blanchard, S. Griveau, P. Simon, M. Fontecave, F. Bedioui, A. Proust*

Electro-Assisted Reduction of CO_2 to CO and Formaldehyde by $(TOA)_6[\alpha\text{-}SiW_{11}O_{39}Co(\ )]$ Polyoxometalate

The cobalt derivative of the silico-undecatungstate $[\alpha\text{-}SiW_{11}O_{39}Co(-)]^{6-}$ is a catalyst for the multiproton-multielectron electrochemical reduction of CO_2, with unique selectivity. Analysis of electrolysis products in the gas and liquid phases shows the formation of CO and HCHO without detection of H_2.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201500389**

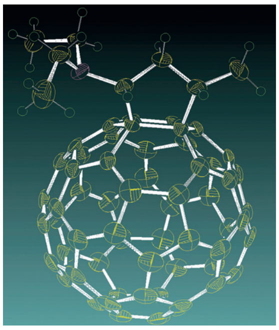


Fullerene Adducts

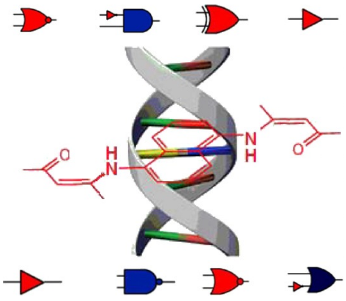
M. Chen, W. Shen, L. Bao, W. Cai, Y. Xie, T. Akasaka, X. Lu*

Regioselective Thermal Reaction between Triethylamine and C_{60} Revisited: X-ray Confirmation of the Pentane-Fused Adduct and in Situ Mechanism Study

X-ray crystallographic results unambiguously confirm for the first time the pentane-fused structure of adduct **1** obtained from the reaction between triethylamine (TEA) and C_{60}. The successful detection of intermediates (acetaldehyde and diethylamine) involved in the thermal reaction makes the reaction mechanism clear.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201500814**



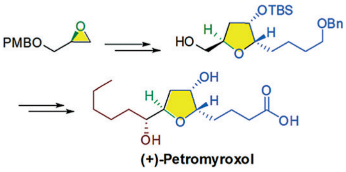
Molecular Logic Gates

S. Yousuf, R. Alex, P. M. Selvakumar,* I. V. M. V. Enoch,*
P. S. Subramanian, Y. Sun

Picking Out Logic Operations in a Naphthalene β-Diketone Derivative by Using Molecular Encapsulation, Controlled Protonation, and DNA Binding

Lifting logic from molecules: Compounds or complexes that have different properties depending on specific inputs, e.g. pH, can be used to generate Boolean logic functions. Naphthalene β-diketone derivatives bind to DNA and β-cyclodextrin, where aminopentenone substituents are encapsulated inside the β-cyclodextrin cavity. The resulting compound displays NOR, XOR, NAND, and Buffer logic operations based on proton, cyclodextrin, and DNA as chemical inputs.

ChemistryOpen
DOI: **10.1002/open.201500034**



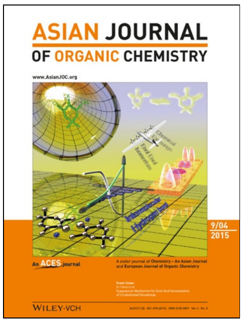
Total synthesis (+)-Petromyroxol

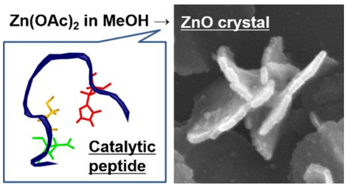
S. Gahalawat, Y. Garg, S. K. Pandey*

Total Synthesis of (+)-Petromyroxol, a Marine Natural Product

Call the marines! An efficient total synthesis of (+)-petromyroxol, a marine natural product, is described. The synthesis utilizes the Sharpless asymmetric dihydroxylation (AD), intramolecular S_N2 cyclization and stereoselective Grignard reaction as key steps. Bn = benzyl; PMB = *para*-methoxybenzyl; TBS = *tert*-butyldimethylsilyl.

Asian J. Org. Chem.
DOI: **10.1002/ajoc.201500301**





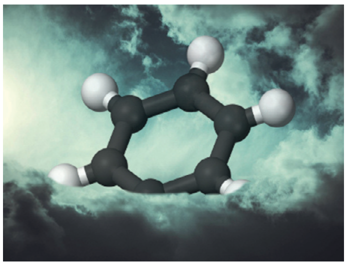
Biomineralization

Y. Maeda, Z. Wei, Y. Ikezoe, H. Matsui*

Enzyme-Mimicking Peptides to Catalytically Grow ZnO Nanocrystals in Non-Aqueous Environments

A catalytic peptide, discovered through hydrogel-based phage display, could generate ZnO nanocrystals in higher crystallinity than a natural enzyme, subtilisin, at room temperature in organic solvents.

ChemNanoMat
DOI: **10.1002/cnma.201500041**



Reaction Kinectics

D. Bradley

Benzene - Clearing the Fog

Benzene is a toxic pollutant, and is mainly removed by reaction with hydroxyl radicals in the atmosphere. But how does fog influence this process? US researchers studied the reaction kinetics in a thin-film flow-tube reactor to simulate fog droplets, and observed a substantial rate enhancement. This effect could be exploited for other reactions in the laboratory or industry.

ChemViews magazine
DOI: **10.1002/chemv.201500062**