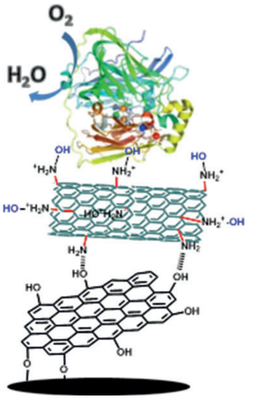
Auf diesen Seiten weisen wir auf wichtige aktuelle Beiträge in unseren Schwesterzeitschriften hin. Wenn Sie die Seiten online lesen, dann können Sie die Artikel mit einem Klick direkt aufrufen, ansonsten sind sie durch Eingabe der DOIs über Wiley Online Library leicht online zugänglich.

Functionalized Carbon Nanotubes

A. Navaee, A. Salimi,* F. Jafari

Electrochemical Pretreatment of Amino-Carbon Nanotubes on Graphene Support as a Novel Platform for Bilirubin Oxidase with Improved Bioelectrocatalytic Activity towards Oxygen Reduction

Graphene support group: The electrochemical pretreatment of amino-carbon nanotubes (CNTs) on graphene support in an alkaline solution was used to produce –NHOH as hydrophilic functional groups for the efficient immobilization of bilirubin oxidase, which was then used in the mediator-less direct electrocatalytic reduction of O_2 to water with onset potential of 0.81 V vs. NHE and peak current density of 2.3 mA cm^{-2}



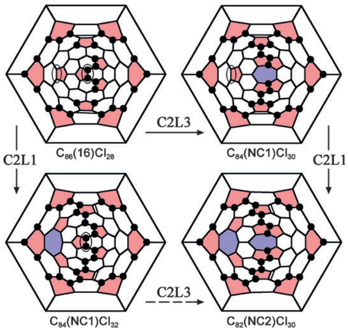
Chem. Eur. J.
DOI: **10.1002/chem.201405200**

Higher Fullerenes

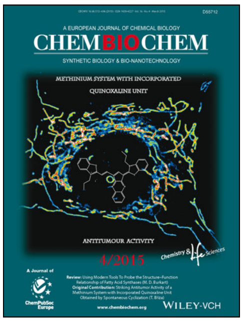
T. Wei, S. Yang,* E. Kemnitz,* S. I. Troyanov*

Two Successive C_2 Losses from C_{86} Fullerene upon Chlorination with the Formation of Non-classical $C_{84}Cl_{30}$ and $C_{82}Cl_{30}$

Cage shrinkage in IPR C_{86} fullerene (isomer 16) occurs in the course of high-temperature chlorination. Single-crystal X-ray study revealed the formation of non-classical $C_{84}Cl_{30}$ and $C_{82}Cl_{30}$ containing one and two heptagons, respectively (shown in blue) in the carbon cages. Thus, two successive C_2 losses (C2Ls) are well documented for the starting, intermediate, and final structures involved in this forked skeletal transformation.



Chem. Asian J.
DOI: **10.1002/asia.201500041**

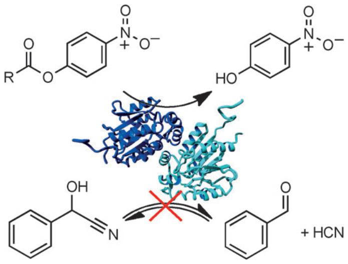


Biosynthesis

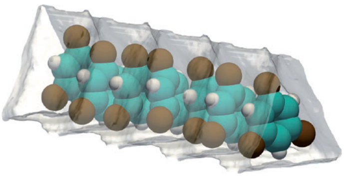
G. Torrelo,* F. Z. Ribeiro de Souza, E. Carrilho, U. Hanefeld

Xylella fastidiosa Esterase Rather than Hydroxynitrile Lyase

Unmasking *Xf*HNL activity: We demonstrate that the product of the gene SCJ21.16 (XFa0032) from *X. fastidiosa* encodes a protein with esterase activity. Sequence alignment, docking simulations and activity assays support this. Our findings could contribute to elucidating a common ancestor of esterases and hydroxynitrile lyases with an α/β-hydrolase fold.



ChemBioChem
DOI: **10.1002/cbic.201402685**



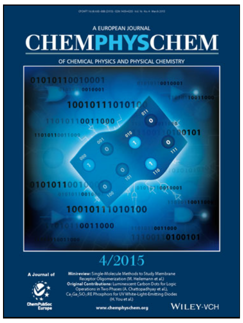
Zeolites

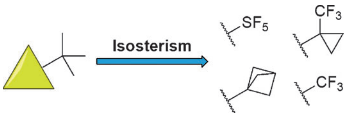
A. Torres-Knoop,* S. R. G. Balestra, R. Krishna, S. Calero, D. Dubbeldam

Entropic Separations of Mixtures of Aromatics by Selective Face-to-Face Molecular Stacking in One-Dimensional Channels of Metal–Organic Frameworks and Zeolites

Well separated: Separation of challenging mixtures using metal–organic frameworks can be achieved by an entropy-driven mechanism, where one of the components can arrange into a “face-to-face” stacking, thus reducing its “footprint” and reaching a higher saturation loading.

ChemPhysChem
DOI: **10.1002/cphc.201402819**





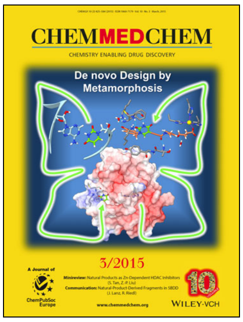
Drug Design

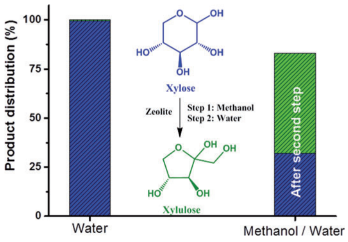
M. V. Westphal, B. T. Wolfstädter, J.-M. Plancher, J. Gatfield, E. M. Carreira*

Evaluation of *tert*-Butyl Isosteres: Case Studies of Physicochemical and Pharmacokinetic Properties, Efficacies, and Activities

The alternative scene: Given how common the *tert*-butyl group is in medicinal chemistry, we set out to explore some isosteric alternatives in hopes of identifying motifs that circumvent the common drawbacks imparted by *tert*-butyl groups, such as increased lipophilicity and lower metabolic stability.

ChemMedChem
DOI: **10.1002/cmdc.201402502**





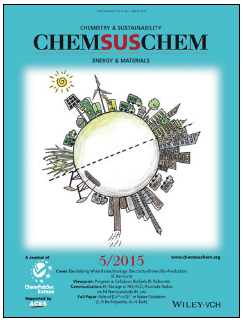
Renewables

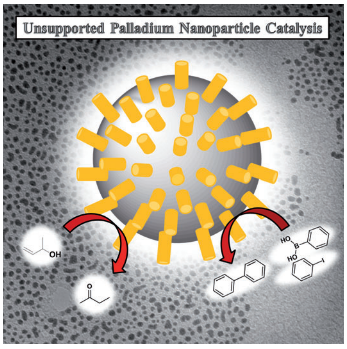
M. Paniagua, S. Saravanamurugan, M. Melian-Rodriguez, J. A. Melero, A. Riisager*

Xylose Isomerization with Zeolites in a Two-Step Alcohol–Water Process

Appropriate acidity? Large-pore zeolites efficiently isomerize xylose to form xylulose in a two-step methanol–water process with high yields compared with enzymes. The reaction pathway involves two steps: xylose isomerization to xylulose, followed by hydrolysis to form additional xylulose.

ChemSusChem
DOI: **10.1002/cssc.201402965**





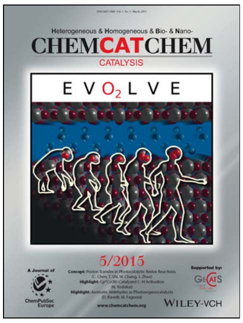
Capped Nanoparticles

D. J. Gavia, Y.-S. Shon*

Catalytic Properties of Unsupported Palladium Nanoparticle Surfaces Capped with Small Organic Ligands

Put a feather in your cap! This Minireview summarizes a variety of intriguing catalytic studies accomplished by employing unsupported, either solubilized or freely mobilized, and small organic ligand-capped palladium nanoparticles as catalysts. The nanoparticle catalysts are grouped depending on the type of surface stabilizers with reactive head groups including thiolate, phosphine, amine, and alkyl azide.

ChemCatChem
DOI: **10.1002/cctc.201402865**

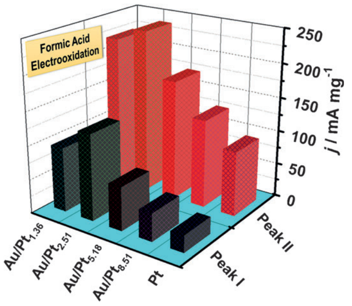


Electrocatalysis

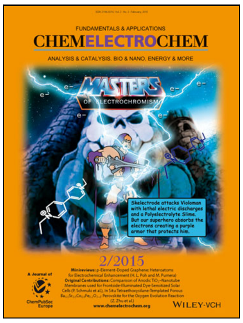
K. Zhang, F. Ren, H. Wang, C. Wang, M. Zhu,* Y. Du*

Facile Synthesis of Gold-Modified Platinum Catalysts with High Performance for Formic Acid Electro-oxidation

Superior replacement: Bimetallic gold/platinum electrocatalysts with different atomic ratios can be facilely fabricated through a galvanic replacement reaction. Electrochemical measurements reveal that these catalysts exhibit highly efficient and stable electrocatalytic performances towards formic acid oxidation in an acidic medium (see figure).



ChemPlusChem
DOI: **10.1002/cplu.201402231**

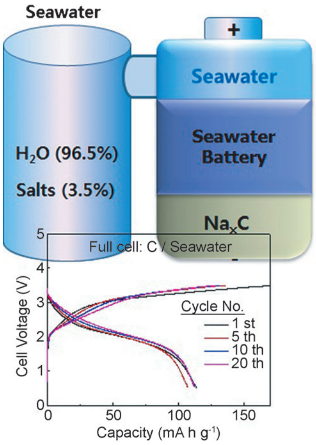


Batteries

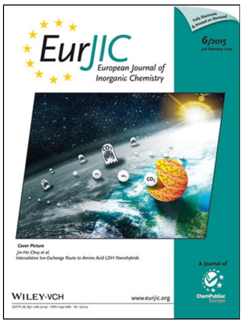
J.-K. Kim, E. Lee, H. Kim, C. Johnson, J. Cho,* Y. Kim*

Rechargeable Seawater Battery and Its Electrochemical Mechanism

Seawater cathode: The electrochemical mechanism of a novel rechargeable seawater battery system is explored. The seawater provides both anode (Na metal) and cathode (O_2) materials for the proposed battery. Based on the discharge voltage (~2.9 V) with participation of O_2 and the charge voltage (~4.1 V) with Cl_2 evolution during the first cycle, a voltage efficiency of about 73 % is obtained.



ChemElectroChem
DOI: **10.1002/celc.201402344**

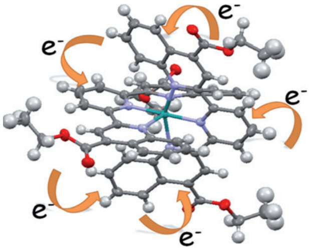


Polypyridyl Complexes

I. Marin, C. Turta, A. C. Benniston,* R. W. Harrington, W. Clegg

Homoleptic and Heteroleptic Ruthenium(II) Complexes Based on 2,6-Bis(quinolin-2-yl)pyridine Ligands – Multiple-Charged-State Modules for Potential Density Memory Storage

The ligands diethyl 2,2′-(pyridine-2,6-diyl)bis(quinolone-4-carboxylate) (**L**$_2$) and 2,6-bis(4-methylquinolin-2-yl)pyridine (**L**$_1$) were used to prepare the homoleptic [Ru(**L**$_1$)$_2$][PF_6]$_2$ (RU**1**) and heteroleptic [Ru(**L**$_1$)(**L**$_2$)][PF_6]$_2$ (RU**2**) complexes. Electrochemistry experiments showed that the complexes can hold up to five electrons reversibly.



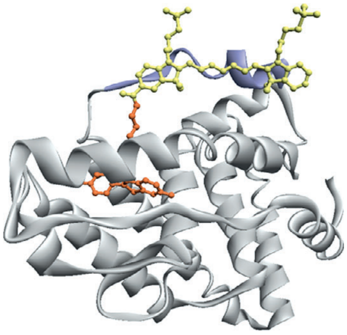
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201403088**

Protein–Ligand Interactions

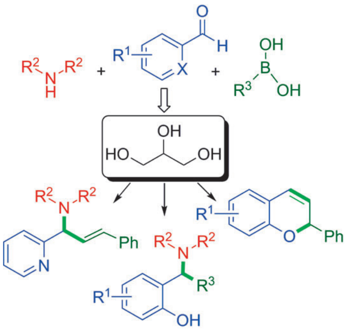
F. Abendroth, M. Solleder, D. Mangoldt, P. Welker, K. Licha, M. Weber, O. Seitz*

High Affinity Fluorescent Ligands for the Estrogen Receptor

Dual click reactions have facilitated hydrophobic tagging of selective estrogen receptor modulators (SERMs). Raloxifene conjugation with fluorescent dyes afforded fluorescent ER with affinities superior to estradiol. These stains accumulate in ER expressing cells at low nanomolar concentrations and molecular dynamics simulations suggest dye–ER associations via helix 12 contacts.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201403489**



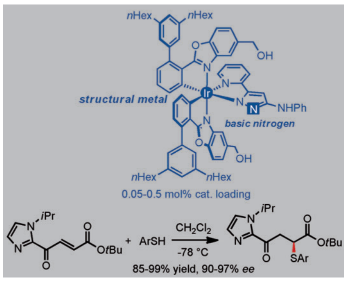
ChemistryOpen
DOI: **10.1002/open.201402066**

Organic Synthesis

T. Rosholm, P. M. P. Gois, R. Franzen, N. R. Candeias*

Glycerol as an Efficient Medium for the Petasis Borono–Mannich Reaction

Enjoy a different solvent! Glycerol is explored as an effective medium for the multicomponent Petasis borono–Mannich (PBM) reaction with aromatic aldehydes. Alkylaminophenols, 2-substituted pyridines, and 2*H*-chromenes were prepared in reasonable to good yields. Interestingly, crude glycerol, a byproduct of the biodiesel industry, was used for the PBM reaction successfully. A mechanistic study of the reaction based on density functional theory was also performed.



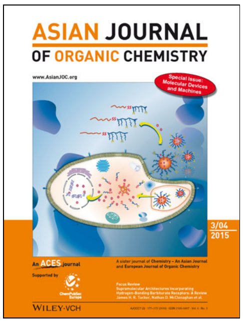
Asian J. Org. Chem.
DOI: **10.1002/ajoc.201500033**

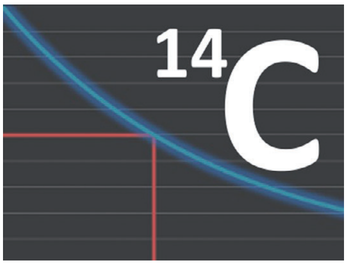
Synthetic Methods

X. Ding, H. Lin, L. Gong,* E. Meggers*

Enantioselective Sulfa-Michael Addition to α,β-Unsaturated γ-Oxoesters Catalyzed by a Metal-Templated Chiral Brønsted Base

Low loader: A chiral-at-metal octahedral iridium(III) complex serves as a low-loading chiral Brønsted base catalyst for an enantioselective Michael addition. This work highlights the manifold opportunities provided by this metal-templated design in which the metal exerts a purely structural role whereas catalysis is mediated through the organic ligand sphere (metal-templated organocatalysis).





ChemViews magazine
DOI: **10.1002/chemv.201500011**

History

75th Anniversary: Discovery of Carbon 14

On February 27, 1940, Martin Kamen and Samuel Ruben confirmed the existence of the carbon isotope $_{14}$C. This discovery opened up new possibilities for using radioactive tracers and led to the development of radiocarbon dating, a breakthrough in archaeology.