Angewandte Top-Beiträge ...

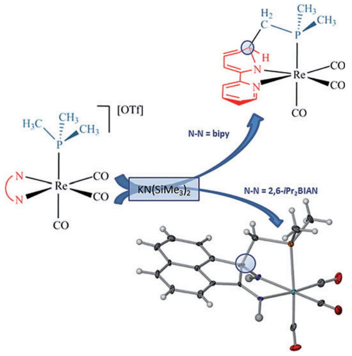
Auf diesen Seiten weisen wir auf wichtige aktuelle Beiträge in unseren Schwesterzeitschriften hin. Wenn Sie die Seiten online lesen, dann können Sie die Artikel mit einem Klick direkt aufrufen, ansonsten sind sie durch Eingabe der DOIs über Wiley Online Library leicht online zugänglich.

Rhenium

R. Arévalo, J. Pérez,* L. Riera

Deprotonation of Coordinated Phosphanes in a Rhenium Complex: C–C Coupling with Diimine Coligands

Re-joined: C–C coupling between phosphane and diimine ligands takes place when rhenium complexes are treated with a strong base. Treatment of *fac*-$[Re(bipy)(CO)_3(PMe_3)][OTf]$ with $KN(SiMe_3)_2$ is shown to cause deprotonation of a methyl group, resulting in a bond formation between a P-bonded methylene group and the C6 position of 2,2′-bipyridine (bipy). (iPr$_2$BIAN = 1,2-bis[(2,6-diisopropylphenyl)imino]acenaphthene).



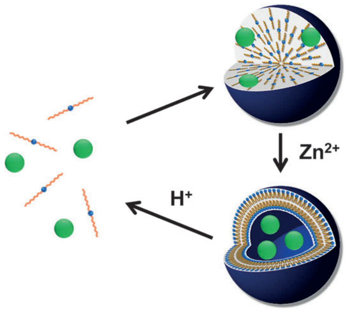
Chem. Eur. J.
DOI: **10.1002/chem.201406442**

Conformation Analysis

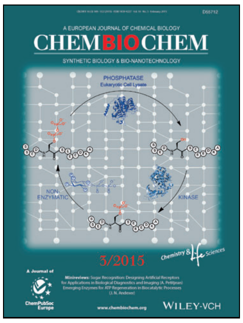
J. Takeuchi, A. Ohkubo, H. Yuasa*

A Ring-Flippable Sugar as a Stimuli-Responsive Component of Liposomes

Molecular switch assembly: A ring-flippable sugar is applied in switching of linear–bent lipid structures in a stimuli-responsive manner. In water, the synthesized lipid and a fluorescent probe form solid micelles. Upon addition of Zn^{2+}, the micelles transformed into liposomes that incorporated the probe, which was released by adding H^+ (see figure).



Chem. Asian J.
DOI: **10.1002/asia.201403271**

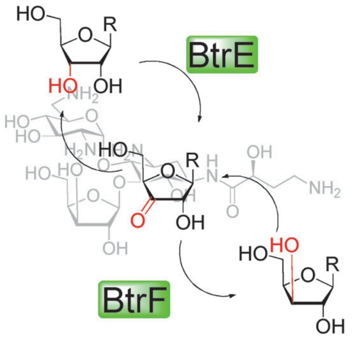


Natural Products

R. Takeishi, F. Kudo,* M. Numakura, T. Eguchi*

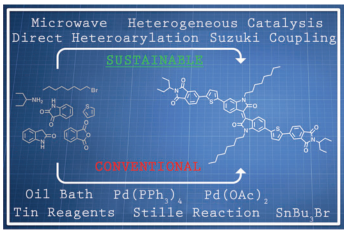
Epimerization at C-3′′ in Butirosin Biosynthesis by an NAD$^+$-Dependent Dehydrogenase BtrE and an NADPH-Dependent Reductase BtrF

E and F, you complete me: Two NAD(P)-dependent oxidoreductases, BtrE/BtrF, were found to catalyze the C-3′′ epimerization of ribostamycin and xylostasin through a 3′′-oxoribostamycin intermediate. BtrE/BtrF strictly recognize pseudo-trisaccharide structures and the stereochemistry of the pentose moieties. This two-step epimerization mechanism may be present in many other natural product biosynthetic pathways.



ChemBioChem
DOI: **10.1002/cbic.201402612**

Organic Electronics

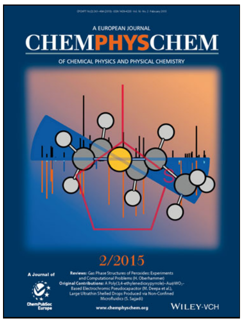


S. M. McAfee, J. M. Topple, A.-J. Payne, J.-P. Sun, I. G. Hill,* G. C. Welch*

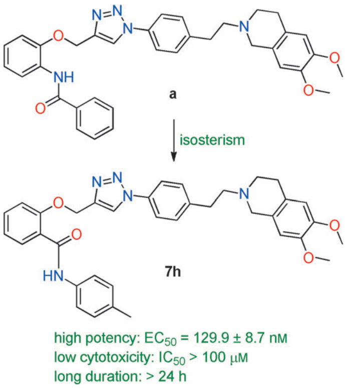
An Electron-Deficient Small Molecule Accessible from Sustainable Synthesis and Building Blocks for Use as a Fullerene Alternative in Organic Photovoltaics

A blueprint for the sustainable synthesis of electron-accepting small molecules as fullerene alternatives in organic photovoltaics is presented.

ChemPhysChem
DOI: **10.1002/cphc.201402662**



Antitumor Agents

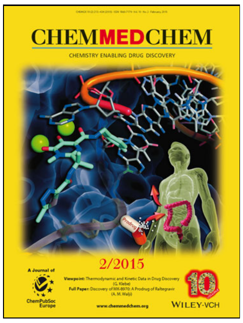


B. Liu, Q. Qiu, T. Zhao, L. Jiao, Y. Li, W. Huang,* H. Qian*

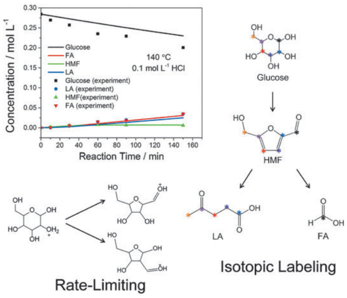
6,7-Dimethoxy-2-{2-[4-(1*H*-1,2,3-triazol-1-yl)phenyl]ethyl}-1,2,3,4-tetrahydroisoquinolines as Superior Reversal Agents for P-Glycoprotein-Mediated Multidrug Resistance

Efflux blockers! Seventeen compounds based on the 6,7-dimethoxy-2-{2-[4-(1*H*-1,2,3-triazol-1-yl)phenyl]ethyl}-1,2,3,4-tetrahydroisoquinoline scaffold were synthesized. Among them, compound **7h** (shown) was found to be more potent than the L-type calcium channel blocker verapamil in reversing P-glycoprotein-mediated multidrug resistance; it was also found to persist for a longer time.

ChemMedChem
DOI: **10.1002/cmdc.201402463**



Biomass Conversion

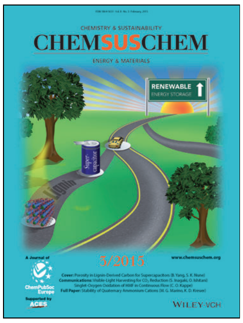


L. Yang, G. Tsilomelekis, S. Caratzoulas, D. G. Vlachos*

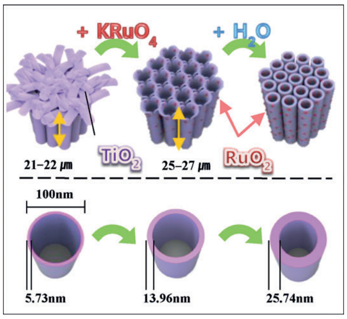
Mechanism of Brønsted Acid-Catalyzed Glucose Dehydration

Glucose dehydration: The DFT-based microkinetic modeling of the Brønsted acid-catalyzed dehydration of glucose is in excellent agreement with experimental kinetic data. The rate-limiting step is the first dehydration of protonated glucose. Isotopic tracing NMR spectroscopy reveals that glucose dehydrates through a cyclic path and the majority of glucose is consumed by the 5-hydroxymethylfurfural intermediate at low conversions.

ChemSusChem
DOI: **10.1002/cssc.201403264**



Water Oxidation

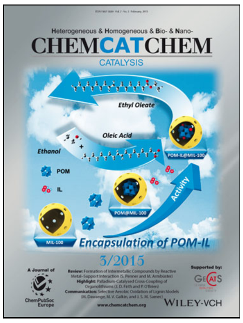


H. Yoo, Y.-W. Choi, J. Choi*

Ruthenium Oxide-Doped TiO_2 Nanotubes by Single-Step Anodization for Water-Oxidation Applications

Thicker walls and longer tubes: High-aspect-ratio TiO_2 nanotubes with a doping of ruthenium oxide have been prepared by single anodization in an electrolyte containing $KRuO_4$ and H_2O. The additives act as a source of dopant and supporting electrolyte, leading to thickening of the nanotube walls. As a result, ruthenium oxide-doped TiO_2 nanotubes with longer nanotubes are achievable and could be successfully used as water-oxidation electrodes.

ChemCatChem
DOI: **10.1002/cctc.201402787**

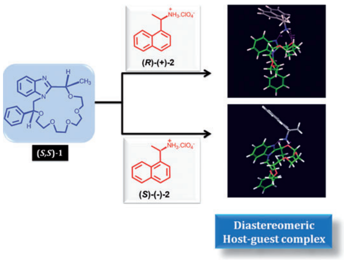


Chiral Discrimination

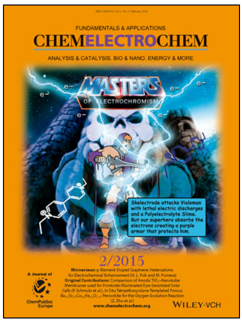
A. D. Pandey, H. Mohammed, R. R. S. Pissurlenkar, A. V. Karnik*

Size-Induced Chiral Discrimination Switching by (*S*)-(−)-2(α-Hydroxyethyl)Benzimidazole-Derived Azacrowns

Switching sides: The size of a chiral azacrown rather than the configuration of the chiral center/s in the hosts is the dominant influence on the enantioselective binding of guests. Thus, *S*-(−)-2(α-hydroxyethyl)-benzimidazole-derived [15]crown-5 azacrown exhibit a preference for the *S* enantiomer of amino guests, whereas *S*-(−)-2(α-hydroxyethyl)-benzimidazole-derived [18]crown-6 azacrowns exhibit a preference for the *R* enantiomer (see scheme).



ChemPlusChem
DOI: **10.1002/cplu.201402141**

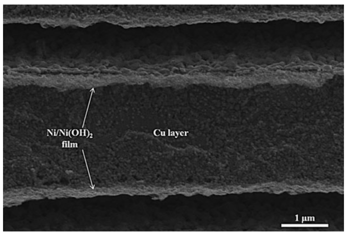


Electrode Materials

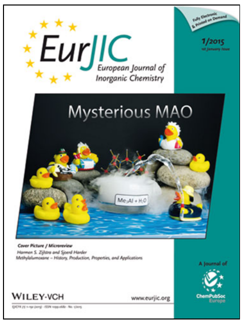
A. Armutlulu,* L. A. Bottomley, S. A. Bidstrup Allen, M. G. Allen

Supercapacitor Electrodes Based on Three-Dimensional Copper Structures with Precisely Controlled Dimensions

Layer it on thick: Deterministically engineered, three-dimensional Cu architectures serving as low-resistance current collectors for supercapacitor applications are fabricated through microfabrication and electrochemical techniques. These techniques enable the realization of high-performance electrodes with precisely controlled characteristic dimensions including the surface area, thickness of the active material, and interlayer spacing.



ChemElectroChem
DOI: **10.1002/celc.201402333**

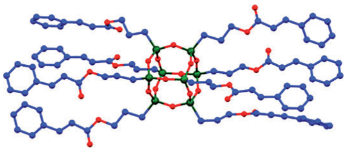


Silsesquioxanes

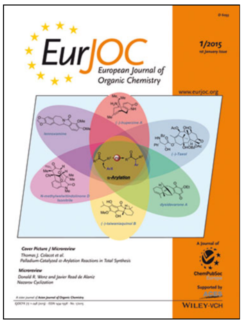
W. Yang, Y. Gan, X. Jiang, H. Liu*

Cinnamate-Functionalized Cage Silsesquioxanes as Photoreactive Nanobuilding Blocks

From potassium cinnamate, photoreactive mono-, octa-, and deca(propyl cinnamate)-functionalized cage silsesquioxanes are synthesized by simple nucleophilic substitution reactions with chloropropyl-substituted octasilsesquioxanes. Among them, octa(propyl cinnamate)silsesquioxane exhibits excellent properties such as high photopolymerization conversion of double bonds and thermal stability.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201402920**

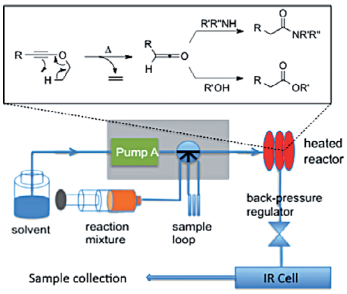


Flow Chemistry

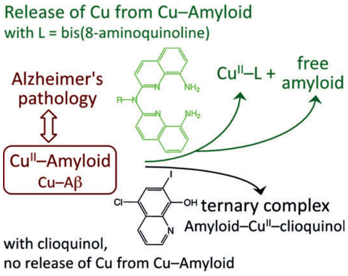
C. Henry, D. Bolien, B. Ibanescu, S. Bloodworth, D. C. Harrowven, X. Zhang, A. Craven, H. F. Sneddon, R. J. Whitby*

Generation and Trapping of Ketenes in Flow

Ketenes are generated under flow conditions by thermal sigmatropic rearrangement of alkoxyalkynes. Subsequent trapping with amines or alcohols gives amide or ester products, respectively. Inline monitoring by IR spectroscopy and offline analysis by ^{1}H NMR spectroscopy allow the rapid study of kinetics and optimisation of the reaction.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201403603**



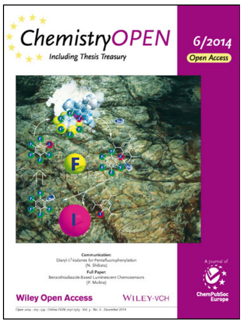
ChemistryOpen
DOI: **10.1002/open.201402075**

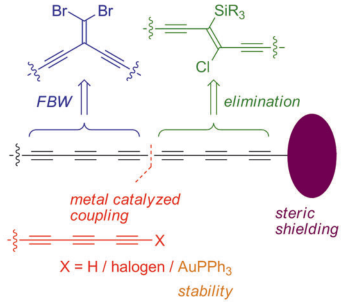
Drug Design

M. Nguyen, L. Rechignat, A. Robert,* B. Meunier*

The Necessity of Having a Tetradentate Ligand to Extract Copper(II) Ions from Amyloids

Clearing out the Cu in AD: Bis(8-aminoquinoline) ligands are drug candidates able to extract Cu^{II} from copper-loaded amyloid peptides (Aβ) in order to restore copper homeostasis in the brain of patients. Contrarily, in the presence of an 8-hydroxyquinoline such as clioquinol, the copper ions remain sequestrated within an Aβ–Cu–clioquinol ternary complex.





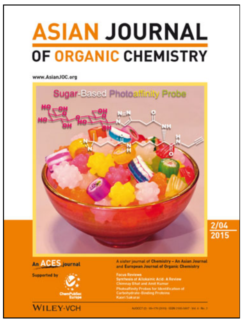
Asian J. Org. Chem.
DOI: **10.1002/ajoc.201402261**

Oligoynes

M. Jevric,* M. B. Nielsen*

Synthetic Strategies for Oligoynes

How long can you go? Conjugated oligoynes can be prepared in various ways, ranging from metal-catalyzed couplings of terminal alkynes and 1-haloalkynes to rearrangement reactions, such as the Fritsch-Buttenberg-Wiechell (FBW) reaction, to scaffolding with diethynylethenes as masked hexatriynes. Oligoyne stability can be enhanced by bulky end groups, whereas enhanced stability of terminal acetylene building blocks can be achieved by gold(I) end-caps.



ChemViews magazine
DOI: **10.1002/chemv.201500001**

Conducting Materials

John Uhlrich

Carbon Networks for Improved Batteries

In “Behind the Science”, *ChemViews Magazine* gives readers a peek behind the scenes of a research article. This time, John Uhlrich, *Energy Technology*, talks to Jim Yang Lee, National University of Singapore, about his recent article on increasing the performance of lithium-ion battery cathodes with conductive carbon networks.