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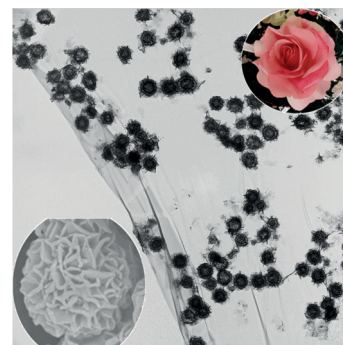


### Functional Materials

R. Cai, D. Yang, L. Zhang, L. Qiu, H. Liang, X. Chen, S. Cansiz, Z. Zhang, S. Wan, K. Stewart, Q. Yan, W. Tan\*

A Facile Process for the Preparation of Three-Dimensional Hollow  $\text{Zn}(\text{OH})_2$  Nanoflowers at Room Temperature

**Double-shelled  $\text{Zn}(\text{OH})_2$  nanoflowers (DNFs)** were synthesized with uniform size and hollow double-shell features. The thickness of the inner and outer shells is estimated to be about 20 nm, and the thickness of nanopetals is about 7 nm. As a proof-of-concept, the DNFs exhibited excellent ability to remove organic molecules from aqueous solutions (see figure).



Chem. Eur. J.  
DOI: 10.1002/chem.201600906

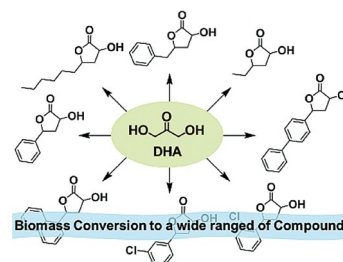


### Lactones

S. Yamaguchi,\* T. Matsuo, K. Motokura, A. Miyaji, T. Baba\*

Cascade Synthesis of Five-Membered Lactones using Biomass-Derived Sugars as Carbon Nucleophiles

**Biomass conversion:** The cascade synthesis of five-membered lactones from a biomass-derived triose sugar, 1,3-dihydroxyacetone, and various aldehydes has been reported. The cascade reaction led to high product selectivity as well as diastereoselectivity, and the mechanism explaining the diastereoselectivity was discussed based on isomerization experiments and density functional theory (DFT) calculations.



Chem. Asian J.  
DOI: 10.1002/asia.201600307

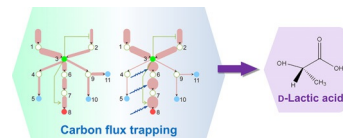


### Biosynthesis

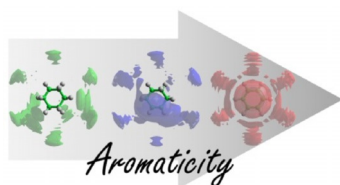
C. Li, F. Tao, P. Xu\*

Carbon Flux Trapping: Highly Efficient Production of Polymer-Grade D-Lactic Acid with a Thermophilic D-Lactate Dehydrogenase

**To achieve high-temperature fermentation** of polymer-grade D-lactic acid, a unique D-lactate dehydrogenase was introduced into a thermo-tolerant butane-2,3-diol-producing strain. Surprisingly, a “trapping” effect was caused by the enzyme on the carbon flux for D-lactic acid synthesis. As a result, high titer and yield of D-lactic acid were achieved.



ChemBioChem  
DOI: 10.1002/cbic.201600288



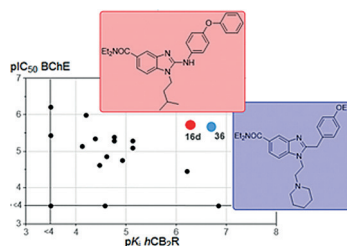
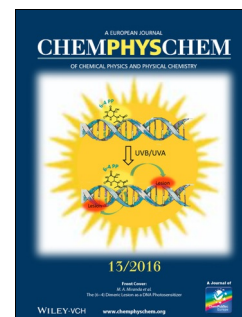
ChemPhysChem  
DOI: 10.1002/cphc.201600149

## Neutron Scattering

M. Falkowska, D. T. Bowron, H. G. Manyar, C. Hardacre,\*  
T. G. A. Youngs\*

Neutron Scattering of Aromatic and Aliphatic Liquids

**Liquid refreshment:** How does the presence of aromatic bonds or a methyl group influence the local ordering in liquids? To answer this question, five pure solvents (cyclohexane, cyclohexene, methylcyclohexane, benzene, and toluene) are studied by neutron scattering, obtaining information about the preferable separations, arrangement (see picture), and orientations between molecules in each liquid.



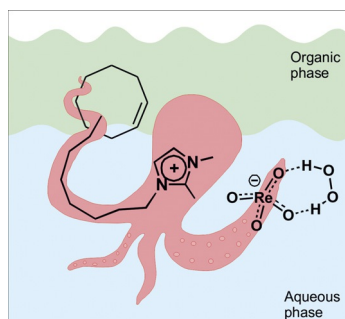
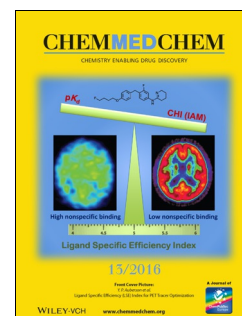
ChemMedChem  
DOI: 10.1002/cmdc.201500418

## Multitarget Drugs

D. Dolles, M. Nimczick, M. Scheiner, J. Ramler, P. Stadtmüller,  
E. Sawatzky, A. Drakopoulos, C. Sottriffer, H.-J. Wittmann, A. Strasser,  
M. Decker\*

Aminobenzimidazoles and Structural Isomers as Templates for Dual-Acting Butyrylcholinesterase Inhibitors and  $hCB_2R$  Ligands To Combat Neurodegenerative Disorders

**Two in one:** In this study dual-acting compounds were identified and optimized, and binding modes were computationally investigated to yield ligands that can bind selectively to the cannabinoid receptor 2 ( $CB_2R$ ) and inhibit butyrylcholinesterase (BChE) in the same concentration range. Such compounds serve as leads for multitarget drugs acting at both GPCRs and enzymes for therapeutic application in neurodegenerative disorders.



ChemSusChem  
DOI: 10.1002/cssc.201600373

## Homogeneous Catalysis

M. Cokoja,\* R. M. Reich, M. E. Wilhelm, M. Kaposi, J. Schäffer,  
D. S. Morris, C. J. Münchmeyer, M. H. Anthofer, I. I. E. Markovits,  
F. E. Kühn, W. A. Herrmann, A. Jess, J. B. Love

Olefin Epoxidation in Aqueous Phase Using Ionic-Liquid Catalysts

**Right combination:** Imidazolium perhenate ionic liquids (ILs) are effective catalysts for the epoxidation of unfunctionalized olefins using hydrogen peroxide as oxidant. The catalytic activity strongly depends on the IL solubility in aqueous  $H_2O_2$ , which is regulated by the nature of the cation. The IL catalysts significantly enhance the solubility of olefins into the aqueous phase, allowing for the reaction to take place in water.



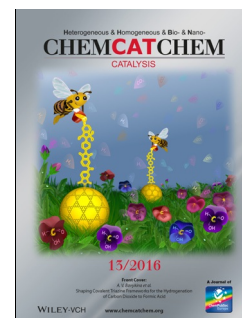
ChemCatChem  
DOI: 10.1002/cctc.201600506

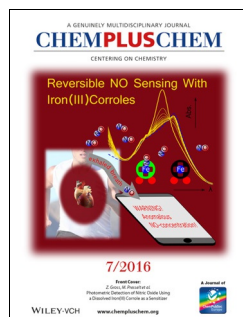
## Conference Report

T. Seidensticker, R. V. Engel, T. Pogrzeba\*

Weimar 2016: Catalysis Strikes Back

**YounGeCATS celebrate catalysis:** The 49th annual meeting of the German Catalysis Society (GeCATS), hosted by DECHEMA, was recently held in Weimar. The conference featured a comprehensive and interdisciplinary program, including excellent plenary lectures, oral and poster presentations from all disciplines in catalysis.



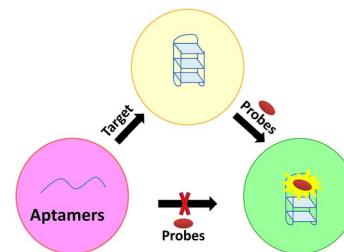


## Sensors

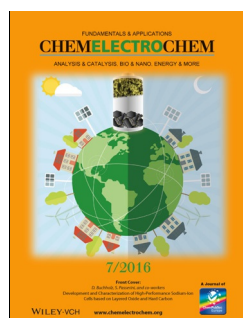
D.-L. Ma,\* W. Wang, Z. Mao, T.-S. Kang, Q.-B. Han, P. W. H. Chan, C.-H. Leung\*

Utilization of G-Quadruplex-Forming Aptamers for the Construction of Luminescence Sensing Platforms

**G whiz:** Aptamers are nucleic acid sequences that can recognize and bind to analytes with high affinity and selectivity (see figure). Several aptamers undergo a conformational change within the G-quadruplex motif upon ligand binding. This Minireview examines interesting examples of luminescent G-quadruplex aptamer-based probes that have recently been developed. Various mechanisms and sensing modes are described. Future directions in this field are also discussed.



ChemPlusChem  
DOI: 10.1002/cplu.201600036

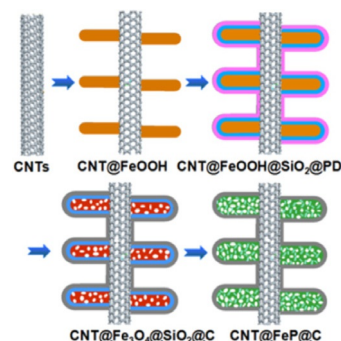


## Sodium-Ion Batteries

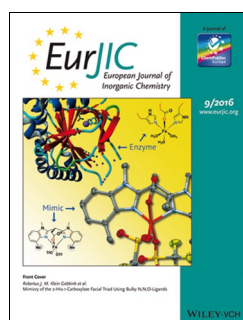
F. Han, C. Y. J. Tan, Z. Gao\*

Improving the Specific Capacity and Cyclability of Sodium-Ion Batteries by Engineering a Dual-Carbon Phase-Modified Amorphous and Mesoporous Iron Phosphide

**On the up!** A synthetic strategy is developed to construct carbon-coated iron phosphide with an amorphous and mesoporous framework anchored on carbon nanotubes. When utilized as anodes in sodium-ion batteries, much improved performance in terms of specific capacity and cycle life is obtained.



ChemElectroChem  
DOI: 10.1002/celec.201600101

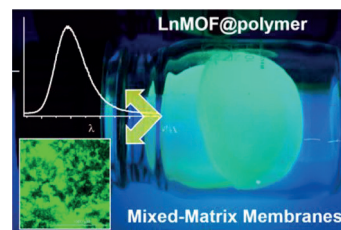


## MOF Polymer Membranes

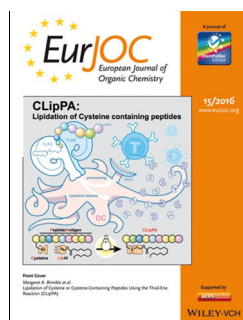
J. Dechnik, F. Mühlbach, D. Dietrich, T. Wehner, M. Gutmann, T. Lühmann, L. Meinel, C. Janiak,\* K. Müller-Buschbaum\*

Luminescent Metal-Organic Framework Mixed-Matrix Membranes from Lanthanide Metal-Organic Frameworks in Polysulfone and Matrimid

The luminescent metal-organic framework/polymer (MOF-polymer) mixed-matrix membranes  $^3_{\infty}[\text{Sr}_{0.9}\text{Eu}_{0.1}\text{Im}_2]@\text{PSF}$  ( $\text{Im}^-$  = imidazolate, PSF = polysulfone),  $^3_{\infty}[\text{Sr}_{0.9}\text{Eu}_{0.1}\text{Im}_2]@\text{Matrimid}$ , and  $^2_{\infty}[\text{Tb}_2\text{Cl}_6(\text{bipy})_3] \cdot 2\text{bipy}@\text{PSF}$  ( $\text{bipy}$  = 4,4'-bipyridine) are prepared with the polysulfone Ultrason® S and Matrimid®. Thereby, MOF luminescence can be maintained and transferred into processable polymer membranes.



Eur. J. Inorg. Chem.  
DOI: 10.1002/ejic.201600235

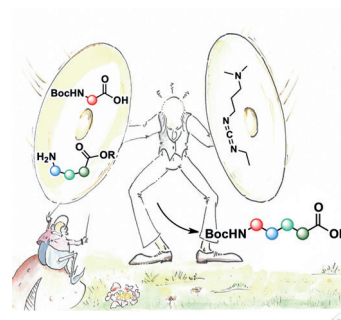


## Peptide Synthesis

V. Porte, M. Thioly, T. Pigoux, T.-X. Métro,\* J. Martinez, F. Lamaty\*

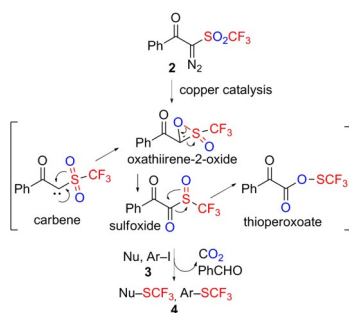
Peptide Mechanosynthesis by Direct Coupling of N-Protected α-Amino Acids with Amino Esters

Liquid-assisted grinding (LAG) enables intensive, scalable, and environmentally benign production of peptides by direct coupling of N-protected α-amino acids with amino esters mediated by N-ethyl-N'-(3-dimethylaminopropyl)carbodiimide. Association of ball-milling, judiciously selected liquid additive, and reagents with reduced safety profiles furnish the peptides in good to excellent yields.



Eur. J. Org. Chem.  
DOI: 10.1002/ejoc.201600617





ChemistryOpen

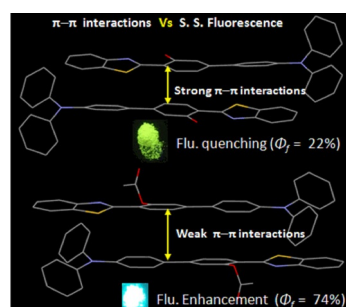
DOI: 10.1002/open.201500225

## Catalysis

Z. Huang, K. Okuyama, C. Wang, E. Tokunaga, X. Li, N. Shibata\*

2-Diazo-1-phenyl-2-((trifluoromethyl)sulfonyl)ethan-1-one: Another Utility for Electrophilic Trifluoromethylthiolation Reactions

**Double-sided utility!** 2-Diazo-1-phenyl-2-((trifluoromethyl)sulfonyl)ethan-1-one (**2**), which was originally used for the synthesis of  $\beta$ -lactam triflones as a  $\text{SO}_2\text{CF}_3$  building block under catalyst-free thermal conditions, is rediscovered as an effective electrophilic  $\text{SCF}_3$  reagent under copper catalysis. Enamines, indoles,  $\beta$ -keto esters, pyrroles, anilines, and aryl iodides were nicely transformed into corresponding  $\text{SCF}_3$  compounds by diazo-triflone **2** under copper catalysis.



Asian J. Org. Chem.

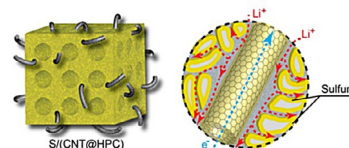
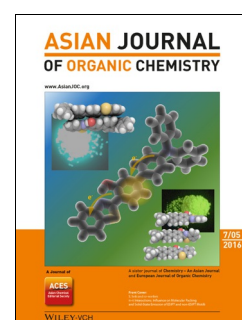
DOI: 10.1002/ajoc.201600159

## Solid-State Luminescence

V. S. Padalkar,\* D. Sakamaki, K. Kuwada, A. Horio, H. Okamoto, N. Tohnai, T. Akutagawa, K.-i. Sakai, S. Seki\*

 $\pi$ - $\pi$  Interactions: Influence on Molecular Packing and Solid-State Emission of ESIPT and non-ESIPT Motifs

**Pack your things and glow!** The influence of molecular packing on the solid-state emission properties of excited-state intramolecular proton transfer and non-excited-state intramolecular proton transfer motifs is investigated in detail using synthetic, spectroscopic and single-crystal X-ray techniques.



ChemNanoMat

DOI: 10.1002/cnma.201600065

## Cathode Materials

D.-W. Xu, S. Xin, Y. You, Y. Li, H.-P. Cong,\* S.-H. Yu\*

Built-in Carbon Nanotube Network inside a Biomass-Derived Hierarchically Porous Carbon to Enhance the Performance of the Sulfur Cathode in a Li-S Battery

**Li-S Battery:** A highly conductive sulfur cathode has been constructed with a scaled-up synthesis based on embedding a multiwalled carbon nanotube network inside a biomass-derived, hierarchically porous carbon substrate. The resulting material exhibited favorable electrochemical performance in a Li-S battery.



ChemViews magazine

DOI: 10.1002/chemv.201600037

## Biosensors

Y. Krishnan, V. Koester

Give It All You've Got

Yamuna Krishnan, University of Chicago, USA, uses DNA "nanobots" to map chemical environments inside living cells. In ChemViews Magazine, she explains her research, why cooperations with the right people are so important, and how science in the U.S. is different from her native India.

