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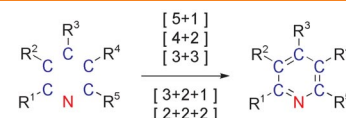


### Heterocycles

M. D. Hill\*

#### Recent Strategies for the Synthesis of Pyridine Derivatives

**Closing the ring:** Modification of traditional condensation strategies continues to be a recurrent theme in contemporary literature. Advancements in transition-metal-catalyzed cyclization and cross-coupling procedures offer new routes to functionalized pyridine derivatives (see scheme).



*Chem. Eur. J.*

DOI: 10.1002/chem.201001100

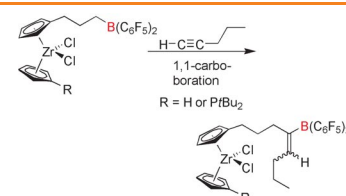


### Carboboration

C. Chen, F. Eweiner, B. Wibbeling, R. Fröhlich, S. Senda, Y. Ohki, K. Tatsumi, S. Grimme, G. Kehr, G. Erker\*

#### Exploring the Limits of Frustrated Lewis Pair Chemistry with Alkynes: Detection of a System that Favors 1,1-Carboboration over Cooperative 1,2-P/B-Addition

**Born of frustration:** The boryl part of a frustrated Lewis pair, attached at the zirconocene framework, reacted with a terminal alkyne by 1,1-carboboration of the triple bond. The Lewis base plays a negligible role in this reaction, as shown on a phosphorous-free example.



*Chem. Asian J.*

DOI: 10.1002/asia.201000189

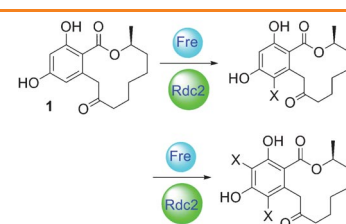


### Biosynthesis

J. Zeng, J. Zhan\*

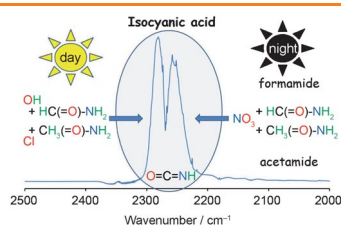
#### A Novel Fungal Flavin-Dependent Halogenase for Natural Product Biosynthesis

**A novel halogenating agent:** A fungal halogenase Rdc2 from *Pochonia chlamydosporia* has been reconstituted in *E. coli* and biochemically characterized as the dedicated halogenase in radicicol biosynthesis. The enzyme displays broad substrate specificity towards molecules such as dihydroresorcylic acid (1) to generate mono- and dihalogenated (X = Br or Cl) derivatives, thus representing a promising biocatalyst for natural product biosynthesis.



*ChemBioChem*

DOI: 10.1002/cbic.201000439



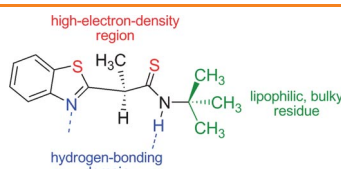
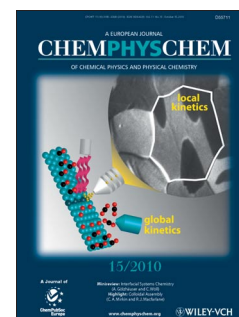
*ChemPhysChem*  
DOI: 10.1002/cphc.201000374

## Gas-phase reactions

I. Barnes,\* G. Solignac, A. Mellouki, K. H. Becker

### Aspects of the Atmospheric Chemistry of Amides

**Active space:** The gas-phase reactions of six amides, formamide, *N*-methyl formamide, *N,N*-dimethyl formamide, acetamide, *N*-methyl acetamide and *N,N*-dimethyl acetamide with the atmospheric oxidants OH radicals and Cl atoms, but in a number of cases also with NO<sub>3</sub> radicals and ozone, are presented and discussed (see graphic).



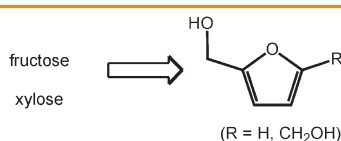
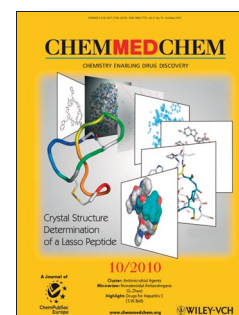
*ChemMedChem*  
DOI: 10.1002/cmdc.201000297

## Drug Design

A. Fischer, C. Schmidt, S. Lachenicht, D. Grittner, M. Winkler, T. Wrobel, A. Rood, H. Lemoine, W. Frank, M. Braun\*

### Synthesis of Benzofuran, Benzothiophene, and Benzothiazole-Based Thioamides and their Evaluation as K<sub>ATP</sub> Channel Openers

**A recipe for success:** Combine a hydrogen-bond donor and acceptor with sulfur atoms that provide a region of high electron density and lipophilic, bulky substituents in an appropriate manner, and you will obtain novel K<sub>ATP</sub> channel openers with remarkable selectivity toward different isoforms of sulfonylurea receptors.



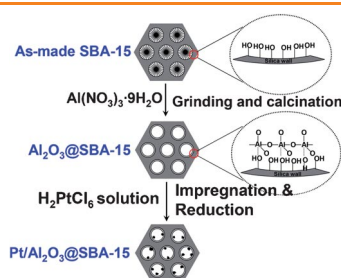
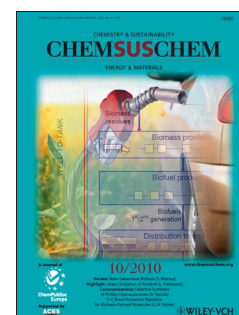
*ChemSusChem*  
DOI: 10.1002/cssc.201000209

## Biorenewables

T. Thananattathanachon, T. B. Rauchfuss\*

### Efficient Route to Hydroxymethylfurans from Sugars via Transfer Hydrogenation

**Tandem catalysis**, relying on formic acid as an acid catalyst and as a source of hydrogen, provides a promising route to highly pure furanylmethanols. The new approach exploits (i) the use of DMSO to mediate highly efficient routes to furfurals and (ii) the ability of transfer hydrogenation catalysts to effect the hydrogenation, with good tolerance for DMSO.



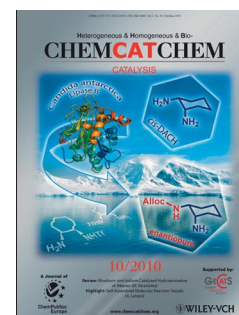
*ChemCatChem*  
DOI: 10.1002/cctc.201000081

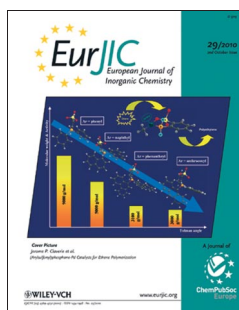
## Supported Catalysts

H. Wang, X. Li,\* Y. M. Wang, P. Wu

### Pt Nanoparticles Supported on Highly Dispersed Alumina Coated inside SBA-15 for Enantioselective Hydrogenation

**Everything's aluminated:** A series of Al<sub>2</sub>O<sub>3</sub>@SBA-15 composites with different Al<sub>2</sub>O<sub>3</sub> loadings are prepared by a solvent-free solid-state grinding method. The composites retain the meso-structure of SBA-15 and the alumina is uniformly coated inside the mesopores. Furthermore, the Al<sub>2</sub>O<sub>3</sub>@SBA-15 composites serve as remarkable supports for Pt nanoparticle catalysts in the enantioselective hydrogenation of ethyl pyruvate.



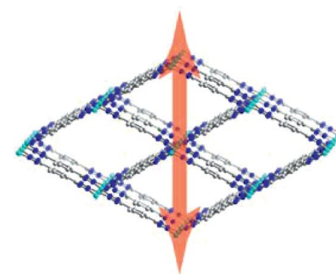


### Flexible Copper(II) MOFs

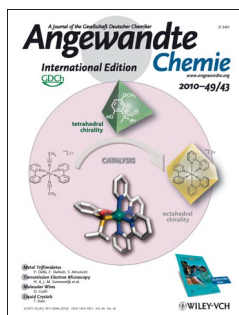
K. Sumida, M. L. Foo, S. Horike, J. R. Long\*

#### Synthesis and Structural Flexibility of a Series of Copper(II) Azolate-Based Metal–Organic Frameworks

The reaction of  $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$  with three novel ligands, 2-methyl-1,4-benzeneditetrazolate ( $\text{MeBDT}^{2-}$ ), 4,4'-biphenylditetrazolate ( $\text{BPDT}^{2-}$ ), and 2,3,5,6-tetrafluoro-1,4-benzeneditriazolate ( $\text{TFBDTr}^{2-}$ ), affords three metal–organic frameworks with a common network topology but a significantly different flexibility, highlighting the significant impact the ligand component can have on the dynamic properties of the material.



*Eur. J. Inorg. Chem.*  
DOI: 10.1002/ejic.201000490

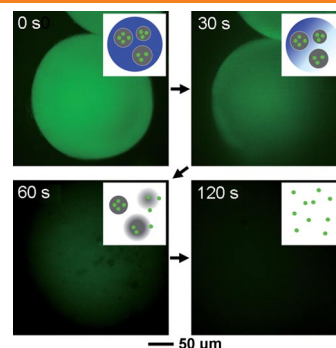


### Drug Release Systems

S. W. Choi, Y. Zhang, Y. Xia\*

#### A Temperature-Sensitive Drug Release System Based on Phase-Change Materials

**Melting away:** Phase-change materials (PCMs) are used to encapsulate colloidal particles with FITC-dextran to demonstrate a new temperature-sensitive drug release system. As the temperature is increased to the melting point of the PCM, the particles leach out, followed by release of FITC-dextran. The initiation and rate of release can be manipulated by using different combinations of materials for the PCM and colloidal particles.



*Angew. Chem. Int. Ed.*  
DOI: 10.1002/anie.201004057

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