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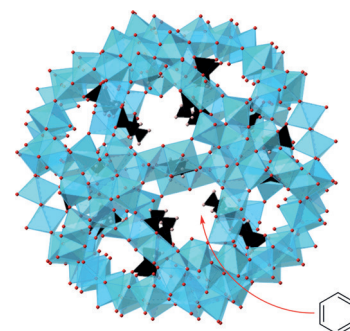


### Nanostructures

B. B. Sarma, L. Avram, R. Neumann\*

Encapsulation of Arenes within a Porous Molybdenum Oxide {Mo<sub>132</sub>} Nanocapsule

**Benzene derivatives** can be encapsulated in a water-soluble nanocapsule. Studies by NMR spectroscopy revealed the encapsulation process from the outside of the capsule through its pores and then into the interior. Bonding interactions of arenes and the acetate linkers that line the interior of the Mo<sub>132</sub> capsule and halogen migration reactions were also observed.



Chem. Eur. J.  
DOI: 10.1002/chem.201603596

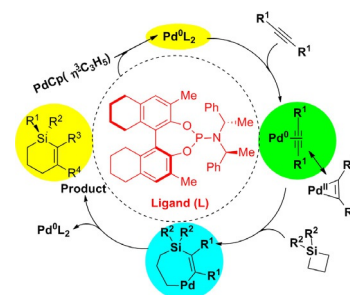


### Reaction Mechanisms

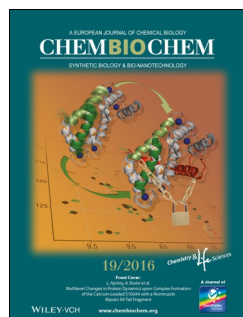
J. Zhang, J.-Z. Xu, Z.-J. Zheng, Z. Xu,\* Y.-M. Cui, J. Cao, L.-W. Xu\*

Palladium-Catalyzed Desymmetrization of Silacyclobutanes with Alkynes to Silicon-Stereogenic Silanes: A Density Functional Theory Study

**Powerful palladium:** The ring-expansion step—which started from an intermediate through alkyne insertion into a Pd–Si bond and led to a seven-membered metallocyclic Pd<sup>II</sup> intermediate—was found to be the rate-determining step. The selective cleavage of the silacyclobutane Si–C bond by the three-membered metallocyclic Pd<sup>II</sup> intermediate was found to be the stereo-controlling step (see scheme).



Chem. Asian J.  
DOI: 10.1002/asia.201600709

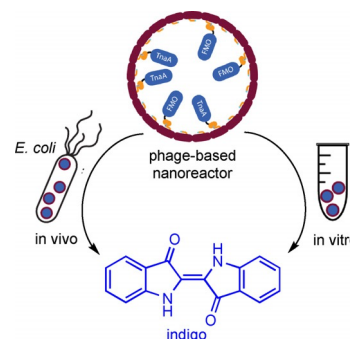


### Synthetic Biology

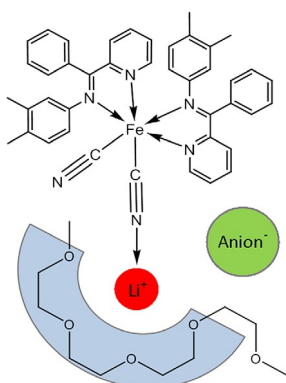
T. W. Giessen, P. A. Silver\*

A Catalytic Nanoreactor Based on in Vivo Encapsulation of Multiple Enzymes in an Engineered Protein Nanocompartment

**Engineering enzyme encapsulation:** Engineering the MS2 phage capsid results in modified nanocages that can be specifically loaded with multiple enzymes. The two-enzyme indigo biosynthetic pathway was targeted to the engineered compartment and shown to increase indigo production in vivo. Particles could also be isolated in their active form and showed enhanced long-term in vitro stability.



ChemBioChem  
DOI: 10.1002/cbic.201600431



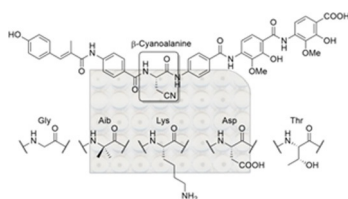
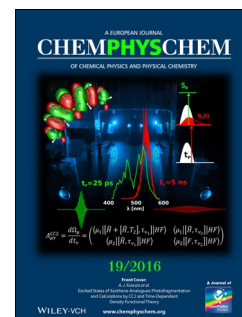
ChemPhysChem  
DOI: 10.1002/cphc.201600361

## Ionic Liquids

D. A. Dolan, D. A. Sherman, R. Atkin, G. G. Warr\*

Kamlet–Taft Solvation Parameters of Solvate Ionic Liquids

**Like an H-bond:** Spectroscopic probing of Kamlet–Taft solvent parameters reveals unusually high H-bond acidity of a range of lithium solvate ionic liquids. Their H-bond basicity depends strongly on how the anion modulates the coordination of the cation by the glyme.



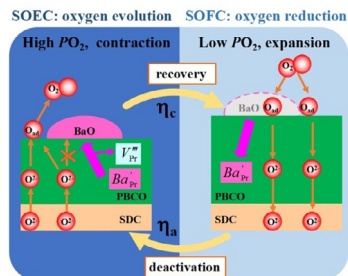
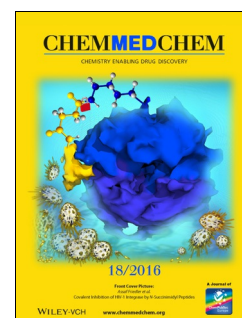
ChemMedChem  
DOI: 10.1002/cmdc.201600163

## Antibiotics

S. Grätz, D. Kerwat, J. Kretz, L. von Eckardstein, S. Semsary, M. Seidel, M. Kunert, J. B. Weston, R. D. Süßmuth\*

Synthesis and Antimicrobial Activity of Albicidin Derivatives with Variations of the Central Cyanoalanine Building Block

**Improving drug-likeness:** Albicidin is a new antibacterial lead structure. To investigate the pharmacophore regions of the structure we chose the central  $\alpha$ -amino acid to be substituted. The bioactivity of the newly synthesized derivatives was determined, and the threonine-containing derivative shows superior target inhibition. These results will aid our understanding of the detailed mode of action and will help to improve the pharmacological and physicochemical properties of albicidin.



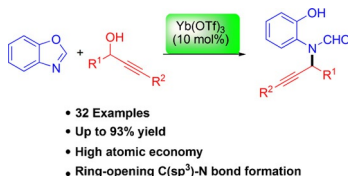
ChemSusChem  
DOI: 10.1002/cssc.201600658

## Fuel Cells

L. Zhu, B. Wei,\* Z. Wang, K. Chen, H. Zhang, Y. Zhang, X. Huang, Z. Lü

Electrochemically Driven Deactivation and Recovery in  $\text{PrBaCo}_2\text{O}_{5+\delta}$  Oxygen Electrodes for Reversible Solid Oxide Fuel Cells

**Biased Surface!** Surface segregation or incorporation of surface species induced the deactivation and recovery process, respectively, of a  $\text{PrBaCo}_2\text{O}_{5+\delta}$  (PBCO) oxygen electrode under electrochemical potentials. The surface chemistry of the PBCO oxygen electrode is very sensitive to electrochemical bias, and thereby is closely related to the activity and stability of electrochemical devices during operation at high temperature.



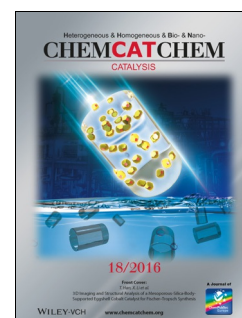
ChemCatChem  
DOI: 10.1002/cctc.201600606

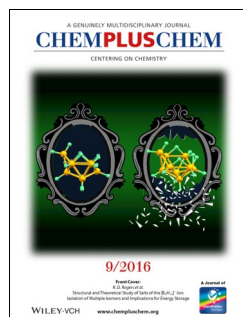
## Ring Opening

W. Liu, Y. Sun, H. Zhao, B. Li, S. Chen\*

Ytterbium(III) Trifluoromethanesulfonate Catalyzed Ring-Opening  $\text{C}(\text{sp}^3)\text{--N}$  Bond Formation of Benzoxazoles with Propargylic Alcohols

**Twists and benz:** A novel ytterbium(III) trifluoromethanesulfonate  $[\text{Yb}(\text{OTf})_3]$ -catalyzed ring-opening  $\text{C}(\text{sp}^3)\text{--N}$  bond formation reaction of benzoxazole with propargylic alcohols is developed. This new transformation makes it possible to construct highly functionalized substituted benzenes bearing aldehyde, propargylamine, and hydroxy groups from simple components with high atom economy.



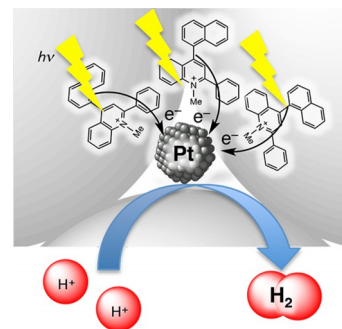


### Mesoporous Materials

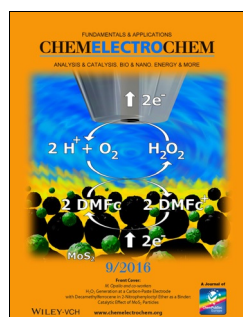
Y. Yamada,\* H. Tadokoro, M. Naqshbandi, J. Canning,\*  
M. J. Crossley,\* T. Suenobu, S. Fukuzumi\*

Nanofabrication of a Solid-State, Mesoporous Nanoparticle Composite for Efficient Photocatalytic Hydrogen Generation

**Making room:** An assembly of nearly monodispersed  $\text{Al}^{3+}$ -doped  $\text{SiO}_2$  nanoparticles (20–30 nm) that display interparticle mesospaces has been found to be suitable for incorporating Pt nanoparticles and an organic photocatalyst (2-phenyl-4-(1-naphthyl)quinolinium ion), which act as an efficient composite catalyst for photocatalytic  $\text{H}_2$  evolution (see figure).



ChemPlusChem  
DOI: 10.1002/cplu.201600148

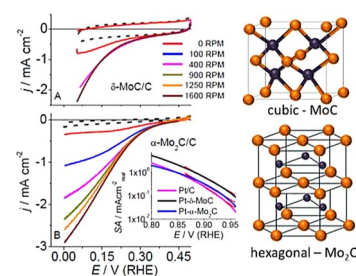


### Electrocatalysis

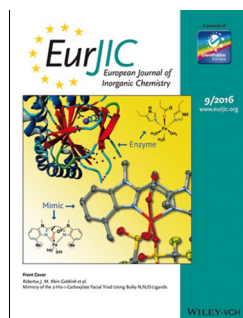
A. M. Gómez-Marín,\* J. L. Bott-Neto, J. B. Souza, Jr., T. L. Silva,  
W. Beck, Jr., L. C. Varanda, E. A. Ticianelli

Electrocatalytic Activity of Different Phases of Molybdenum Carbide/Carbon and Platinum–Molybdenum Carbide/Carbon Composites toward the Oxygen Reduction Reaction

**Carbide catalysts:** Geometric structure plays an important role in determining the catalytic properties of different phases of molybdenum carbides toward a specific reaction, such as the oxygen reduction reaction, both as carbon-supported catalysts (see figure) and as supports for Pt nanoparticles.



ChemElectroChem  
DOI: 10.1002/celec.201600376

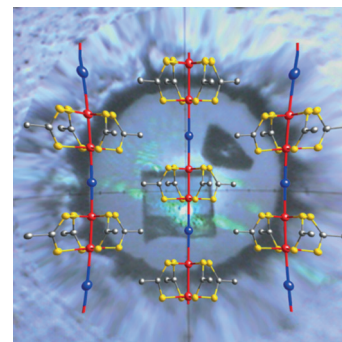


### Conducting MOFs

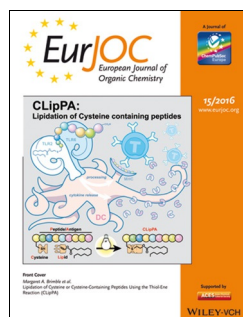
K. Otsubo,\* T. Suto, A. Kobayashi, R. Ikeda, M. Hedo, Y. Uwatoko,  
H. Kitagawa\*

Conducting Behavior and Valence Ordering of a One-Dimensional MMX-Type Coordination Polymer under High Pressure

We report on the conducting behavior and electronic state of a highly conductive MMX-type coordination polymer,  $\text{Pt}_2(\text{dta})_4\text{I}$  ( $\text{dta}$ :  $\text{CH}_3\text{CS}_2^-$ ), under high pressure. This compound shows semiconducting behavior up to 8 GPa. Raman and X-ray diffraction (XRD) studies clearly revealed the electronic states under pressure. In addition, the pressure–temperature phase diagram of this compound was clarified.



Eur. J. Inorg. Chem.  
DOI: 10.1002/ejic.201600499



### Macrocyclic Eneidyne

A. G. Lyapunova, N. A. Danilkina, A. F. Khlebnikov, B. Köberle,  
S. Bräse,\* I. A. Balova\*

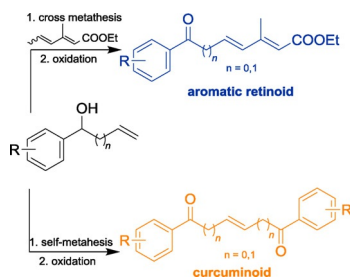
Oxaenediynes through the Nicholas-Type Macrocyclization Approach

The Nicholas-type macrocyclization has been used for the first time for the synthesis of 10- and 11-membered oxaenediynes fused to a benzothiophene. The high reactivity of the 10-membered oxacycles in the Bergman cyclization was confirmed by means of DFT calculations and differential scanning calorimetry. The ability of eneidyne to induce single-strand PM2 DNA scissions was also found.



Eur. J. Org. Chem.  
DOI: 10.1002/ejoc.201600767





ChemistryOpen

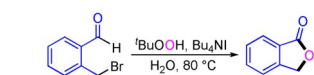
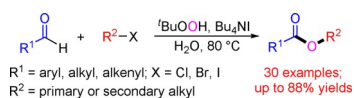
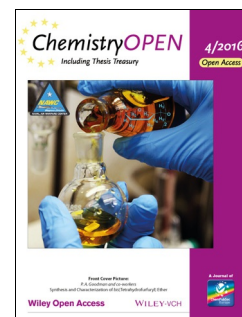
DOI: 10.1002/open.201600027

## Biological Activity

J. W. Morzycki, L. Rárová, J. Grúz, T. Sawczuk, U. Kiełczewska, L. Siergiejczyk, A. Wojtkielewicz\*

Synthesis of Aromatic Retinoids and Curcuminoids and Evaluation of their Antiproliferative, Antiradical, and Anti-inflammatory Activities

**Trying to improve nature:** Natural analogues of vitamin A and curcumin exhibit a variety of biological activities. A series of aromatic retinoids and curcuminoids are synthesized and tested in terms of their antiproliferative, antioxidant, and anti-inflammatory activity. The examined compounds exhibit strong anti-inflammatory potency in vitro without affecting cell viability of endothelial cells, as well as antiproliferative activity in the micromolar range.



Asian J. Org. Chem.

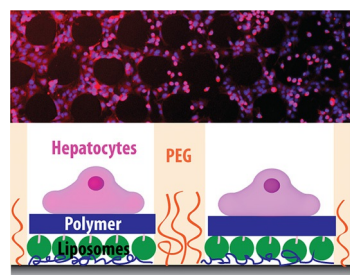
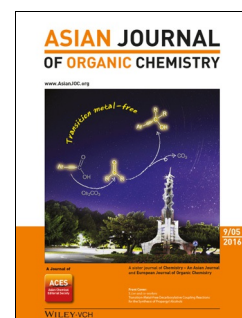
DOI: 10.1002/ajoc.201600342

## Oxidative Esterification

Q.-Q. Wang, Z.-X. Wang, Y.-S. Xu, X.-Y. Zhang,\* X.-S. Fan\*

Bu<sub>4</sub>NI-Catalyzed and tBuOOH-Oxidized Esterification of Aldehydes with Alkyl Halides in Water

**As strong as an Ox:** An efficient oxidative esterification of aldehydes with alkyl halides by using tBuOOH as oxidant, Bu<sub>4</sub>NI as catalyst, and water as solvent is presented. In addition, through an intramolecular version of this novel esterification method, an alternative synthetic approach to isobenzofuran-1(3H)-one was also realized.



ChemNanoMat

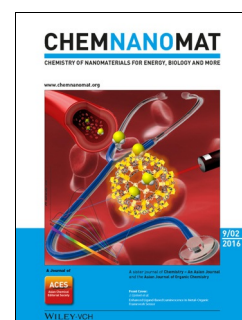
DOI: 10.1002/cnma.201600022

## Biomaterials

Y. Zhang, M. E. Lynge, M. B. Nielsen, P. S. Schattling, X. Han, B. Städler\*

Patterned Liposome-Polymer Composite Coatings

**Composite coatings** consisting of liposomes and different polymer capping layers have been assembled. Hepatocytes adhesion, the association of fluorescent cargo and the delivery of the cytotoxic compound paclitaxel from these films in the presence of cells were assessed. Patterning of the composite coating, including site-selective hepatocyte adhesion, was shown.



ChemViews magazine

DOI: 10.1002/chemv.201600074

## Fluorescent Dyes

K. Lawrence, T. Murai

New Concepts for White-Light Emission

In "Behind the Science", ChemViews Magazine gives readers a peek behind the scenes of a research article. This time, Kate Lawrence, ChemistryOpen, talks to Toshiaki Murai, Gifu University, Japan, about his recent article on fluorescent dyes with acid-responsive absorption and emission characteristics.

