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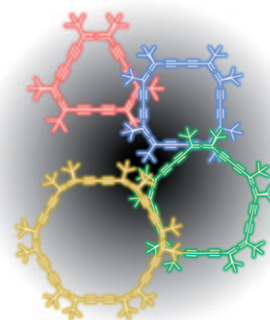


## Chiral Macrocycles

P. Rivera-Fuentes, B. Nieto-Ortega, W. B. Schweizer, J. T. López Navarrete,\* J. Casado,\* F. Diederich\*

Enantiopure, Monodisperse Alleno-acetylenic Cyclooligomers: Effect of Symmetry and Conformational Flexibility on the Chiroptical Properties of Carbon-Rich Compounds

**A multidimensional approach to study chirality:** Enantiopure, monodisperse alleno-acetylenic cyclooligomers were synthesized and analyzed by many spectroscopic methods. Based on this analysis, we suggest some general guidelines for the construction of chiral carbon-rich molecules with strong chiroptical properties.



*Chem. Eur. J.*  
DOI: [10.1002/chem.201100131](https://doi.org/10.1002/chem.201100131)

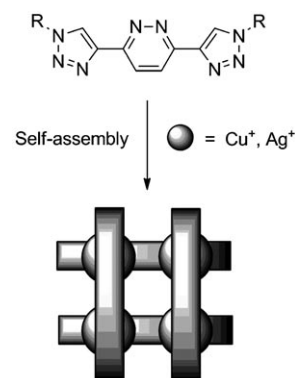


## Self-Assembly

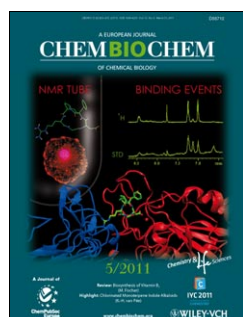
B. Happ, G. M. Pavlov, E. Altuntas, C. Friebe, M. D. Hager, A. Winter, H. Görls, W. Günther, U. S. Schubert\*

Self-Assembly of 3,6-Bis(4-triazolyl)pyridazine Ligands with Copper(I) and Silver(I) Ions: Time-Dependent 2D-NOESY and Ultracentrifuge Measurements

**Metals that rock:** The Sonogashira coupling and the copper(I) catalyzed azide-alkyne cycloaddition provided direct access to 3,6-bis(triazol-4-yl)pyridazine systems, which can be regarded as analogs to 3,6-bis(pyridyl)pyridazine. The introduction of an oligomeric moiety led to a stable copper(I) complex, which is expected to have a [2 × 2] grid-like structure.



*Chem. Asian J.*  
DOI: [10.1002/asia.201000737](https://doi.org/10.1002/asia.201000737)

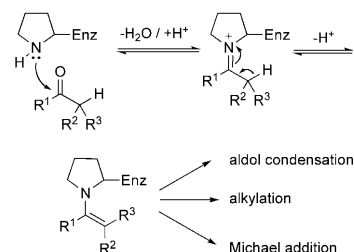


## Enzyme Catalysis

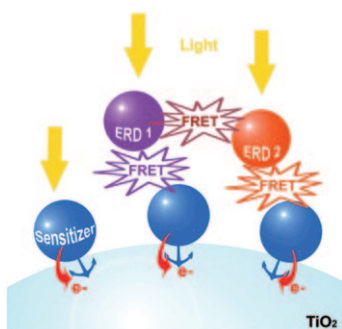
E. Zandvoort, B.-J. Baas, W. J. Quax, G. J. Poelarends\*

Systematic Screening for Catalytic Promiscuity in 4-Oxalocrotonate Tautomerase: Enamine Formation and Aldolase Activity

**Prozymes:** A systematic screening strategy to discover new promiscuous carbonyl-transformation activities in 4-oxalocrotonate tautomerase (4-OT) is reported. The N-terminal proline of this enzyme provides a chemical functionality in the active site that might be suitable for enamine catalysis. It is shown that the aldol condensation of acetaldehyde with benzaldehyde is catalyzed by 4-OT.



*ChemBioChem*  
DOI: [10.1002/cbic.201000633](https://doi.org/10.1002/cbic.201000633)



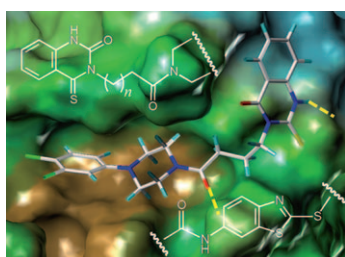
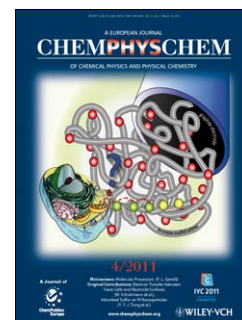
*ChemPhysChem*  
DOI: 10.1002/cphc.201000854

### Dye-Sensitized Solar Cells

J.-H. Yum, B. E. Hardin, E. T. Hoke, E. Baranoff, S. M. Zakeeruddin, M. K. Nazeeruddin, T. Torres, M. D. McGehee, M. Grätzel\*

Incorporating Multiple Energy Relay Dyes in Liquid Dye-Sensitized Solar Cells

**All the colours of the rainbow:** Panchromatic response is essential to increase the light harvesting efficiency in solar conversion systems. The authors incorporate multiple energy relay dyes to gain a panchromatic response in dye-sensitized solar cells (see graphic). The complementary absorption spectrum due to Förster resonance energy transfer increases the photovoltaic performance by 35%.



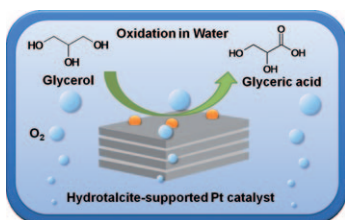
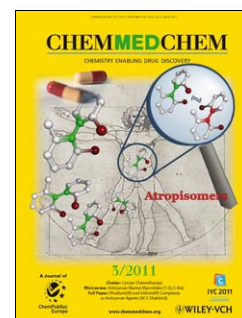
*ChemMedChem*  
DOI: 10.1002/cmdc.201000507

### Drug Design

A. Sun,\* T. W. Moore, J. R. Gunther, M.-S. Kim, E. Rhoden, Y. Du, H. Fu, J. P. Snyder, J. A. Katzenellenbogen\*

Discovering Small-Molecule Estrogen Receptor  $\alpha$ /Coactivator Binding Inhibitors: High-Throughput Screening, Ligand Development, and Models for Enhanced Potency

**Getting in the way!** Analogues of two inhibitors of estrogen receptor-coactivator binding, a quinazolinone (top) and a benzothiazole (bottom), were prepared and assayed for inhibition of transcriptional activity. Computational modeling provided a rationale for structure-activity relationships and identified factors likely limiting the potency of compounds in these series.



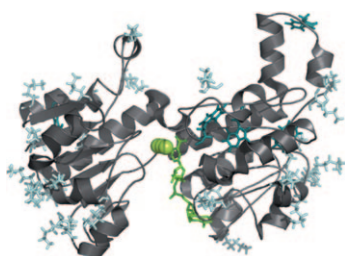
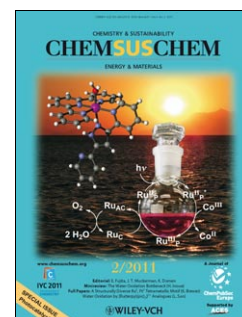
*ChemSusChem*  
DOI: 10.1002/cssc.201000359

### Glycerol Valorization

A. Tsuji, K. T. V. Rao, S. Nishimura, A. Takagaki, K. Ebitani\*

Selective Oxidation of Glycerol by Using a Hydrotalcite-Supported Platinum Catalyst under Atmospheric Oxygen Pressure in Water

**Highly talcited research:** A hydrotalcite-supported platinum catalyst is found to be a highly active and selective heterogeneous catalyst for glycerol oxidation in pure water under atmospheric oxygen pressure, in high glycerol/metal molar ratios (up to 3125). The good results are due to precise control of the platinum metal concentration and the solid basicity of the support (see figure).



*ChemCatChem*  
DOI: 10.1002/cctc.201000390

### Ionic Liquids

M. Bekhouche, L. J. Blum, B. Doumèche\*

Ionic Liquid-Inspired Cations Covalently Bound to Formate Dehydrogenase Improve its Stability and Activity in Ionic Liquids

**Formate dehydrogenase in ionic liquid:** Chemical modification of a formate dehydrogenase by hydroxyalkyl imidazolium, hydroxyalkyl pyrrolidinium, or cholinium cations prevents its unfolding in the presence of [MMIm][Me<sub>2</sub>PO<sub>4</sub>] (MMIm: 1-methyl-3-methyl imidazolium dimethyl-phosphate) according to the B coefficient of the cations.



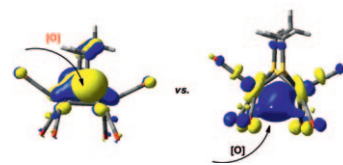


## Sulfoxxygenation

M. Y. Darensbourg,\* W. Weigand\*

Sulfoxxygenation of Active Site Models of [NiFe] and [FeFe] Hydrogenases – A Commentary on Possible Chemical Models of Hydrogenase Enzyme Oxygen Sensitivity

An overview of the oxygen sensitivity of [NiFe] and [FeFe] hydrogenase and studies of oxygen reactivity with synthetic analogues of the enzyme active site are presented. Discrete S-oxygenate complexes that maintain the Ni-S or Fe-S connectivity could signify reversible oxygen damage, and a protective, “antioxidant” role of the sulfur atoms in the active sites.



*Eur. J. Inorg. Chem.*  
DOI: 10.1002/ejic.201001148

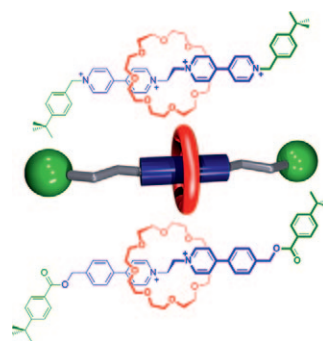


## Rotaxane Synthesis

D. J. Mercer, S. J. Vella, L. Guertin, N. D. Suhan, J. Tiburcio, V. N. Vukotic, J. A. Wisner, S. J. Loeb\*

Rotaxanes Based on the 1,2-Bis(pyridinio)ethane–24-Crown-8 Templating Motif

The 1,2-bis(pyridinio)ethane–24-crown-8 templating motif is a versatile recognition entity for the formation of mechanically interlocked molecules (MIM). The nature of crown ether wheel and the stoppering protocol can be easily varied. This is demonstrated herein by the successful utilization of three different crown ethers and both alkylation and esterification methodologies for stoppering.



*Eur. J. Org. Chem.*  
DOI: 10.1002/ejoc.201001616

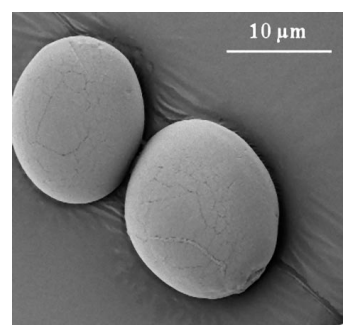


## Vacuum Microwave Treatment of Starch

K. Treppe\*, O. Dixit, N. Mollekopf, P. Fiala

Vacuum Microwave Treatment of Potato Starch and the Resultant Modification of Properties

Vacuum microwave (VMW) is a complex process where the temperature, power and drying profiles are inter-related and dependent on initial sample properties and treatment parameters. The resultant change in the water absorption capacity together with the morphological features of VMW treated starch is presented.



*Chem. Ing. Tech.*  
DOI: 10.1002/cite.201000105