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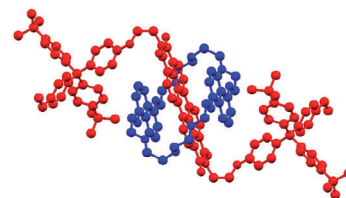


Supramolecular Chemistry

B. J. Slater, E. S. Davies, S. P. Argent, H. Nowell, W. Lewis, A. J. Blake, N. R. Champness*

A Perylene Diimide Rotaxane: Synthesis, Structure and Electrochemically Driven De-Threading

Perylene diimides make excellent building blocks for the formation of [2]-rotaxanes. The rich electrochemistry of the perylene-based recognition site facilitates a pathway to different oxidation states and properties and allows a mechanism for electrochemically driven de-treading of the interlocked species (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201103090

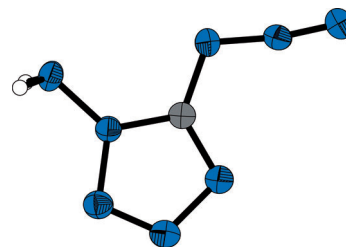


Nitrogen Heterocycles

T. M. Klapötke,* B. Krumm, F. A. Martin, J. Stierstorfer

New Azidotetrazoles: Structurally Interesting and Extremely Sensitive

Hypersensitivity: 1-Amino-5-azidotetrazole (**1**), 5-azido-1-diazido-carbamoyltetrazole (**2**), and 1-(amino-azidocarbamoyl)-5-azidotetrazole (**3**) were formed by the diazotation of triaminoguanidinium chloride and separated by short-column chromatography. Their high nitrogen content results in extremely high sensitivity, therefore handling and characterization were very challenging.



Chem. Asian J.
DOI: 10.1002/asia.201100632

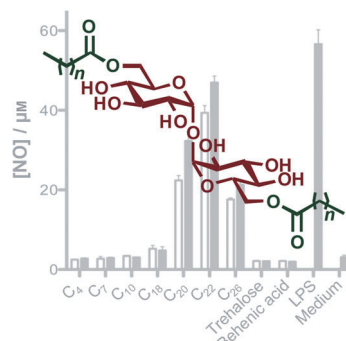


Immunology

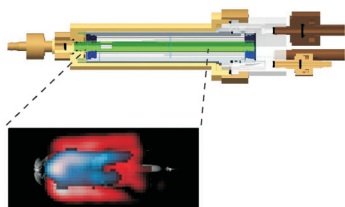
A. A. Khan, S. H. Chee, R. J. McLaughlin, J. L. Harper, F. Kamena, M. S. M. Timmer,* B. L. Stocker*

Long-Chain Lipids Are Required for the Innate Immune Recognition of Trehalose Diesters by Macrophages

Going to any length? Trehalose diesters of various chain lengths have been synthesised in order to determine the effect of lipid length on innate immune recognition, as determined by NO (see graph) and cytokine production by macrophages. In this work, we show that longer lipids (C_{20} – C_{26}) are required for macrophage activation, with C_{22} giving optimal activity.



ChemBioChem
DOI: 10.1002/cbic.201100451



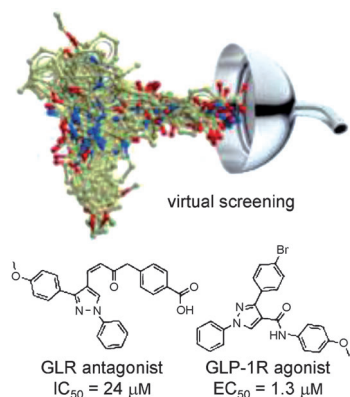
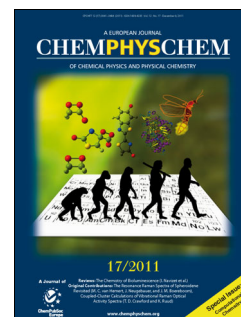
ChemPhysChem
DOI: 10.1002/cphc.201100446

Hyperpolarized Gases

N. Amor,* K. Hamilton,* M. Küppers, U. Steinseifer, S. Appelt, B. Blümich, T. Schmitz-Rode

NMR and MRI of Blood-Dissolved Hyperpolarized Xe-129 in Different Hollow-Fiber Membranes

In the blood: Hollow-fiber membranes for continuous dissolution of hyperpolarized xenon gas into blood are investigated via NMR spectroscopy and imaging with a xenonizer setup (see picture). Spatially resolved functionality is analyzed and a comparison of different fiber materials is presented.



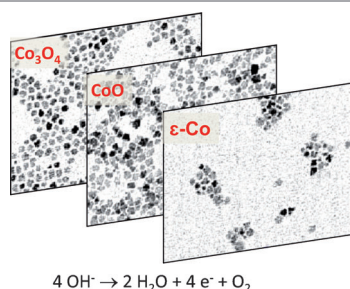
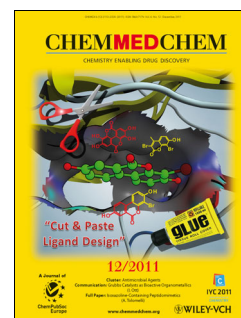
ChemMedChem
DOI: 10.1002/cmdc.201100317

Virtual Screening

C. de Graaf, C. Rein, D. Piwnica, F. Giordanetto, D. Rognan*

Structure-Based Discovery of Allosteric Modulators of Two Related Class B G-Protein-Coupled Receptors

Virtual reality: Although crystallographic structure data and related information have been reported for class A GPCRs, herein we report the first use of structure-based virtual screening to identify new allosteric modulators of class B GPCRs. Despite the modest activities of the identified compounds, this study provides a novel in silico approach for the discovery of future class B GPCR modulators.



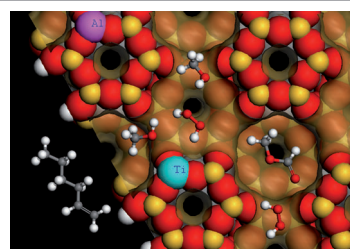
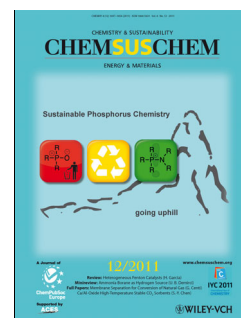
ChemSusChem
DOI: 10.1002/cssc.201100075

Water Oxidation

N. H. Chou, P. N. Ross, A. T. Bell,* T. D. Tilley*

Comparison of Cobalt-based Nanoparticles as Electrocatalysts for Water Oxidation

Water oxidation electrocatalysts: The controlled synthesis of ϵ -Co, CoO, and Co_3O_4 nanoparticles with nearly identical particle size and shape allows comparisons of the inherent catalytic properties of these materials in the oxygen evolution reaction (OER). The nanoparticle electrodes exhibit relatively low overpotentials and very similar catalytic activities under basic conditions.



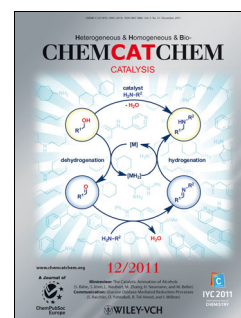
ChemCatChem
DOI: 10.1002/cctc.201100281

Oxidation Catalyst

E. A. Eilertsen, S. Bordiga,* C. Lamberti, A. Damin, F. Bonino, B. Arstad, S. Svelle, U. Olsbye, K. P. Lillerud*

Synthesis of Titanium Chabazite: A New Shape Selective Oxidation Catalyst with Small Pore Openings and Application in the Production of Methyl Formate from Methanol

Take CHance on zeolites: A new titanium silicate oxidation catalyst (Ti-CHA) and a bifunctional titanium aluminum silicate catalyst (Ti-Al-CHA) with the chabazite (CHA) topology have been synthesized. The materials have a 3-dimensional channel system with small pore openings that enable shape selective oxidation catalysis. The new Ti-Al-CHA material facilitates a high conversion of methanol to methyl formate with a selectivity of 85% at 60 °C, using H_2O_2 as the oxidation agent.



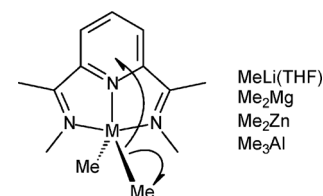


Metal-Alkyl Homolysis

P. H. M. Budzelaar*

Radical Chemistry of Iminepyridine Ligands

Ligands containing at least two imine or pyridine ligands in conjugation reduce the energy required for metal-alkyl homolysis dramatically; ligand alkylation reactions are best explained via free alkyl radicals.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201100698

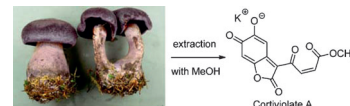


Mushroom Extraction Artefacts

F. von Nussbaum, M. R  th, P. Spiteller, T. H  bscher-Weissert,
F. L  bermann, K. Polborn, W. Steglich*

Coloured Artefacts Formed by Oxidation of Benzene-1,2,4-triol and β -Dopa During the Extraction of *Cortinarius violaceus* (Agaricales) with Alcohols

Extraction of the mushroom *Cortinarius violaceus* with methanol leads to the formation of several colourful artefacts. They arise from benzene-1,2,4-triol, β -dopa, and iron(III) ions, all of which are present in the fungus.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201101215

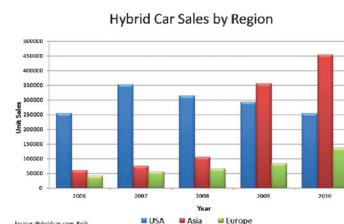


Hybrid Cars

ChemViews magazine

Hybrid Cars

Mass produced hybrids have come a long way since 2001 when the Prius was first launched in Japan. The Industry Roundup gives an overview of hybrid car sales by region, hybrid type, and brand.



ChemViews magazine
DOI: 10.1002/chemv.201000140