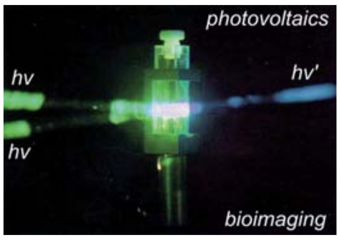
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Energy Up-Conversion

P. Ceroni*

Energy Up-Conversion by Low-Power Excitation: New Applications of an Old Concept

Up, up and away: Energy up-conversion, the generation of a high-energy excited state by absorption of two low-energy photons, is an emerging technique with possible applications in different fields, such as harnessing red or infrared solar photons to power photovoltaic devices.



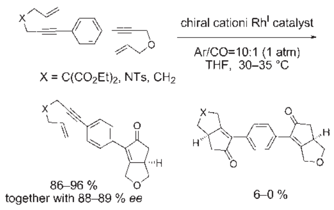
Chem. Eur. J.
DOI: **10.1002/chem.201101102**

Rhodium Catalysis

D. E. Kim, S. H. Park, Y. H. Choi, S.-G. Lee, D. Moon, J. Seo, N. Jeong*

Internal Chelation-Guided Regio- and Stereoselective Pauson–Khand-Type Reaction by Chiral Rhodium(I) Catalysis

Touch, Pauson, engage: To explain the unique superior reactivity and stereoselectivity of *O*-tethered enynes in asymmetric Pauson–Khand type reaction (APKR) than their congeners, the internal-chelation to metal of oxygen atom of the substrate in the transition state was proposed. This proposition was well supported by APKR with several different substrates.



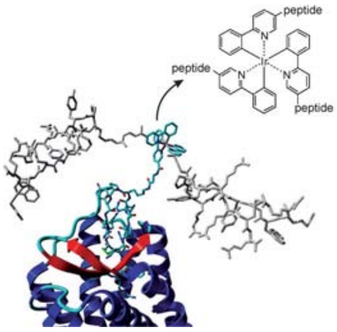
Chem. Asian J.
DOI: **10.1002/asia.201100271**

Iridium(III) Complexes

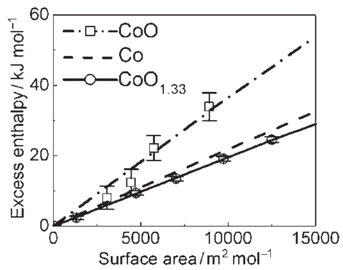
J. Kuil, P. Steunenberg, P. T. K. Chin, J. Oldenburg, K. Jalink, A. H. Velders,* F. W. B. van Leeuwen*

Peptide-Functionalized Luminescent Iridium Complexes for Lifetime Imaging of CXCR4 Expression

FLIM festival: The chemokine receptor 4 (CXCR4) is over-expressed in 23 types of cancer. Different numbers of an antagonistic CXCR4-targeting peptide have been conjugated to luminescent iridium complexes. We have found that these conjugates are able bind CXCR4 with high affinity (see figure), and can be used in fluorescence lifetime imaging microscopy (FLIM) experiments.



ChemBioChem
DOI: **10.1002/cbic.201100271**



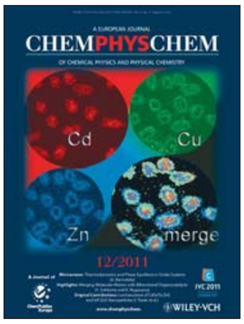
ChemPhysChem
DOI: **10.1002/cphc.201100129**

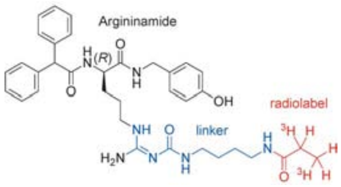
Thermodynamics

A. Navrotsky*

Nanoscale Effects on Thermodynamics and Phase Equilibria in Oxide Systems

Large differences in the surface energies of solid phases with different oxidation states cause shifts in the position of oxidation–reduction equilibria in transition-metal oxides. The small surface energy of M_3O_4 spinel phases favors the spinel (Co_3O_4, Fe_3O_4, Mn_3O_4), whereas the larger energy of metal oxide rocksalt limits the stability of the rocksalt phase (CoO, FeO; see picture) and eliminates the stability field of wustite at the nanoscale.





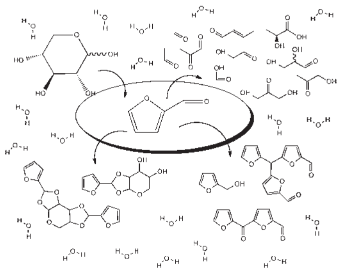
ChemMedChem
DOI: **10.1002/cmdc.201100197**

Radiochemistry

M. Keller, G. Bernhardt, A. Buschauer*

[^{3}H]UR-MK136: A Highly Potent and Selective Radioligand for Neuropeptide Y Y_1 Receptors

Imaging the brain: Attachment of a [2,3-^{3}H]propionyl entity through an aminobutylcarbamoyl linker to the guanidine group of an argininamide-type neuropeptide Y (NPY) Y_1 receptor (Y_1R) antagonist affords a stable, highly potent ($K_d = 2.0$ nM, SK-N-MC cells) and selective Y_1R radioligand.



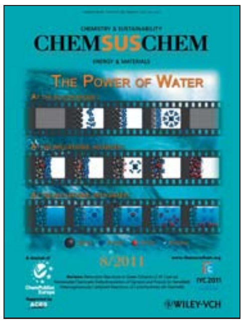
ChemSusChem
DOI: **10.1002/cssc.201000375**

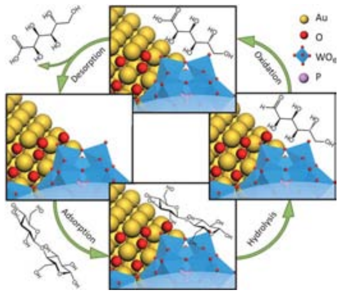
Biorefining

R. Karinen,* K. Vilonen, M. Niemelä*

Biorefining: Heterogeneously Catalyzed Reactions of Carbohydrates for the Production of Furfural and Hydroxymethylfurfural

Biomass is no longer only a raw material for traditional mechanical or chemical conversion, but also a feedstock for biorefineries. Furfural and hydroxymethylfurfural are important biorefinery building blocks. The efficient synthesis of them, consistent with the principles of green chemistry, could rely on active and stable water-tolerant solid acid catalysts. This Review describes recent progress in this area.





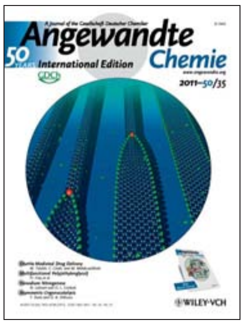
ChemCatChem
DOI: **10.1002/cctc.201100106**

Cellobiose Conversion

J. Zhang, X. Liu, M. N. Hedhili, Y. Zhu, Y. Han*

Highly Selective and Complete Conversion of Cellobiose to Gluconic Acid over Au/$Cs_2HPW_{12}O_{40}$ Nanocomposite Catalyst

Gluconic acid for everyone! A novel Au/$Cs_2HPW_{12}O_{40}$ bifunctional catalyst has been prepared that enables the selective conversion of cellobiose to gluconic acid with a very high yield (up to 96.4 %).

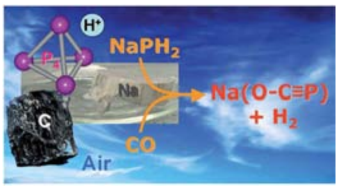


Low-Valent Phosphorus

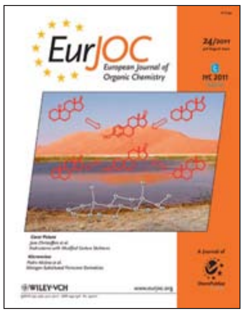
F. F. Puschmann, D. Stein, D. Heift, C. Hendriksen, Z. A. Gal, H.-F. Grützmacher,* H. Grützmacher*

Phosphination of Carbon Monoxide: A Simple Synthesis of Sodium Phosphaethynolate (NaOCP)

Simple basic ingredients are at the origin of the synthesis of Na-(O–C≡P), the phosphorus analogue of sodium cyanate. Na(O–C≡P) is obtained from $NaPH_2$ (made from Na, P, and a proton source) and CO (from carbon and air). This salt is remarkably stable, in strong contrast to H–C≡P discovered 50 years ago.



Angew. Chem. Int. Ed.
DOI: **10.1002/anie.201102930**

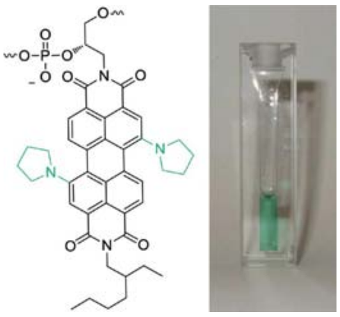


Chromophores in DNA

F. Menacher, H.-A. Wagenknecht*

Synthesis of DNA with Green Perylene Bisimides as DNA Base Substitutions

Perylene bisimide turns green: Two pyrrolidinyl substituents at the bay area of perylene bisimide yields green labeled DNA and a fluorescence that is not quenched by guanines.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201100519**