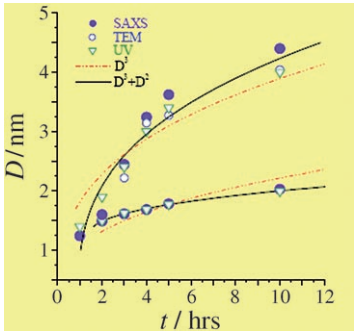
Nanocrystals

*N. Varghese, K. Biswas, C. N. R. Rao**

Investigations of the Growth Kinetics of Capped CdSe and CdS Nanocrystals by a Combined Use of Small Angle X-ray Scattering and Other Techniques

Chem. Asian J.
DOI: **10.1002/asia.200800119**



A lot happens on the surface! The growth kinetics of capped CdSe and CdS nanocrystals deviates from the diffusion-limited Ostwald ripening. It follows the $D^3 + D^2$-type behavior, suggesting that the growth mechanism of the capped nanocrystals involves the combination of diffusion and surface-reaction processes.

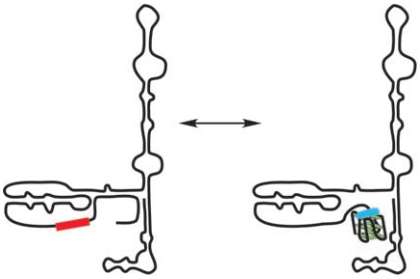
G-Quadruplexes

*J. Gros, A. Guédin, J.-L. Mergny, L. Lacroix**

G-Quadruplex Formation Interferes with P1 Helix Formation in the RNA Component of Telomerase hTERC

ChemBioChem
DOI: **10.1002/cbic.200800300**

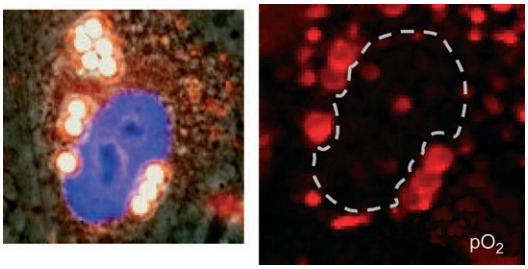
G4-RNA: We report here the formation of a RNA–guanine quadruplex structure in the 5′ part of hTERC, and we demonstrate on a model system that the interaction of this 5′ part with a guanine quadruplex ligand prevents P1 helix formation.



Oxygen Microscopy

*O. S. Finikova, A. Y. Lebedev, A. Aprelev, T. Troxler, F. Gao, C. Garnacho, S. Muro, R. M. Hochstrasser, S. A. Vinogradov**

Oxygen Microscopy by Two-Photon-Excited Phosphorescence



Oxygen distributions are imaged by two-photon laser scanning microscopy (2P LSM) using a newly developed two-photon-enhanced phosphorescent nanoprobe (see figure). 2P LSM allows visualization of oxygen gradients in 3D with near diffraction-limited resolution, and lifetime-based measurements eliminate dependence on the local probe concentration.

ChemPhysChem
DOI: **10.1002/cphc.200800296**

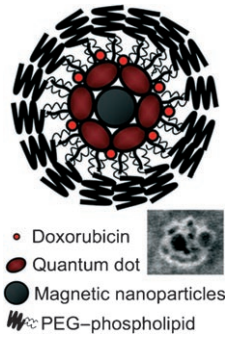
Biological Imaging

*J.-H. Park, G. von Maltzahn, E. Ruoslahti, S. N. Bhatia, M. J. Sailor**

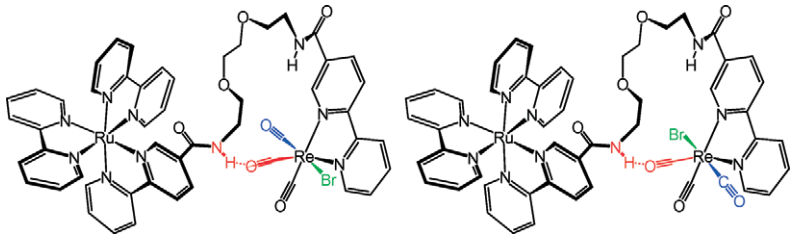
Micellar Hybrid Nanoparticles for Simultaneous Magnetofluorescent Imaging and Drug Delivery

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200801810**

Multimodal nanoassemblies that contain magnetic nanoparticles, quantum dots, and the anticancer drug doxorubicin within a single PEG–phospholipid micelle were prepared (see scheme; PEG = poly(ethylene glycol)). When equipped with the targeting peptide F3, these nanostructures enable simultaneous targeted drug delivery and dual-mode imaging of tumor tissues by near-infrared fluorescence and NMR spectroscopy.



Coordination Chemistry



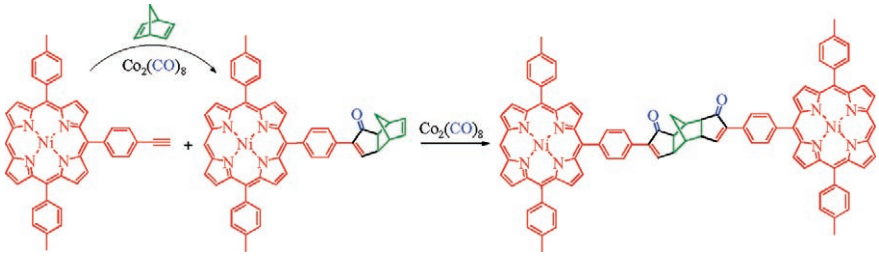
*D. Pelleteret, N. C. Fletcher**

A Modular Approach to Luminescent Dinuclear Ruthenium(II) and Rhenium(I) Complexes

A new stepwise route to heteronuclear tricarbonylrhenium(I)–tris(bipyridine)-ruthenium(II) complexes has been explored with the product exhibiting an unusual configurational arrangement attributed to a hydrogen-bonding interaction between an Re–CO group and an amide proton.

Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200800251**

Porphyrin Chemistry



*S. Horn, M. O. Senge**

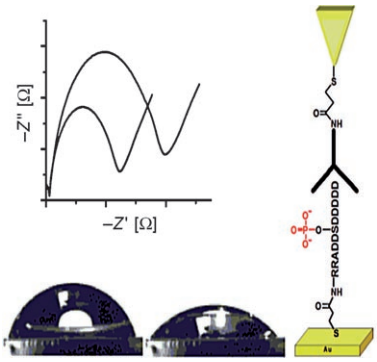
The Intermolecular Pauson–Khand Reaction of *meso*-Substituted Porphyrins

Porphyrins containing alkenyl- and alkynyl-substituents at the *meso* position can be used as precursors for the intermolecular Pauson–Khand reaction. A variety of cyclopentenyl-substituted porphyrins can be synthesised in moderate to good yields. Porphyrin dimers can be obtained with well-defined stereochemistry via a two-step double Pauson–Khand reaction in nearly quantitative yield.

Eur. J. Org. Chem.
DOI: **10.1002/ejoc.200800488**

Biosensors

Versatile sensors: Different methods, such as impedance spectroscopy, molecular-force interactions, or contact-angle measurements proved to be effective tools to probe CK2 protein kinase (see graphic). This enzyme is active in intracellular signal transduction, cell division, and cell proliferation.

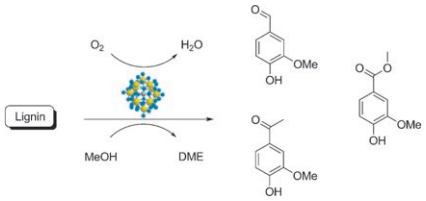


*O. I. Wilner, C. Guidotti, A. Wieckowska, R. Gill, I. Willner**

Probing Kinase Activities by Electrochemistry, Contact-Angle Measurements, and Molecular-Force Interactions

Chem. Eur. J.
DOI: **10.1002/chem.200800765**

Lignin Oxidation



*T. Voitl, P. Rudolf von Rohr**

Oxidation of Lignin Using Aqueous Polyoxometalates in the Presence of Alcohols

Kraft work: The polyoxometalate $H_3PMo_{12}O_{40}$ serves as a multifunctional catalyst in the conversion of Kraft lignin. As a redox catalyst it promotes the degradation of lignin, whereas as an acid catalyst it promotes the conversion of methanol into dimethyl ether (DME). The presence of methanol as an additive prevents lignin from undergoing repolymerization reactions by generating radicals that couple with the lignin fragments.

ChemSusChem
DOI: **10.1002/cssc.200800050**

