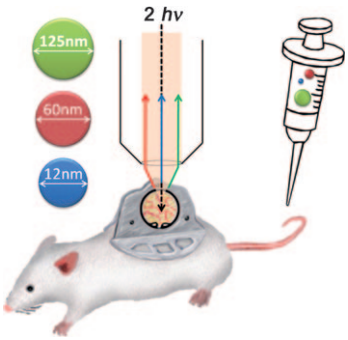
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Medicinal Chemistry

Z. Popović, W. Liu, V. P. Chauhan, J. Lee, C. Wong, A. B. Greytak, N. Insin, D. G. Nocera, D. Fukumura, R. K. Jain, M. G. Bawendi*

A Nanoparticle Size Series for In Vivo Fluorescence Imaging

A nanoparticle toolset was created within the size limits of 10–150 nm for probing size-dependent nanoparticle distribution in solid tumors. By using multiphoton intravital microscopy, the particles were tracked both spatially and temporally in the same tumor grown in a transparent window model.



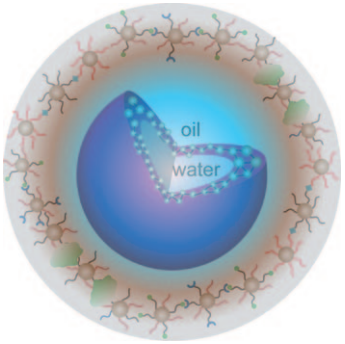
Angew. Chem. Int. Ed.
DOI: **10.1002/anie.201003142**

Colloidal Microcapsules

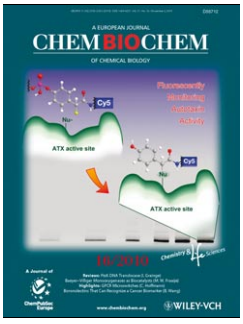
D. Patra, A. Sanyal, V. M. Rotello*

Colloidal Microcapsules: Self-Assembly of Nanoparticles at the Liquid–Liquid Interface

Colloids encapsulated: Self-organization of nanoparticles at the liquid–liquid interface offers an elegant approach to the creation of 2D assemblies at multiple length scales. Chemical interactions between nanoparticles play a major role in stabilizing the assembly process, and prevent thermal escape from the interface. This Review aims to highlight various fabrication strategies, which include surface modification of nanoparticles and the tuning of interparticle interactions to create robust colloidal microcapsules.



Chem. Asian J.
DOI: **10.1002/asia.201000301**

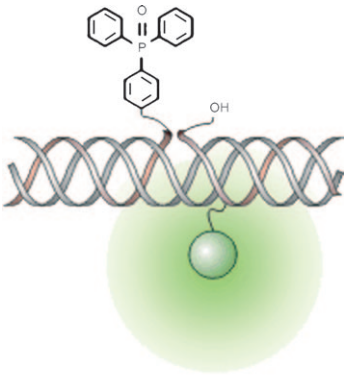


Fluorescent Probes

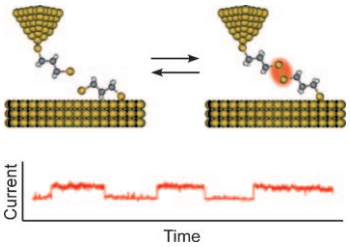
H. Li, R. M. Franzini, C. Bruner, E. T. Kool*

Templated Chemistry for Sequence-Specific Fluorogenic Detection of Duplex DNA

Tempting templates: We describe the development of templated fluorogenic chemistry to detect specific sequences of duplex DNA in solution. Two modified oligodeoxynucleotide probes bind through pyrimidine·purine·pyrimidine triple-helix formation at adjacent positions on a specific purine-rich target sequence of duplex DNA; this results in fluorogenic turn-on by reductive quencher release.



ChemBioChem
DOI: **10.1002/cbic.201000329**



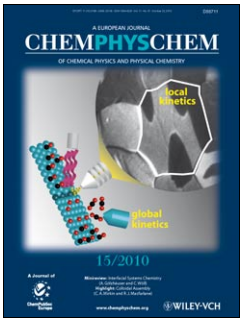
ChemPhysChem
DOI: **10.1002/cphc.201000686**

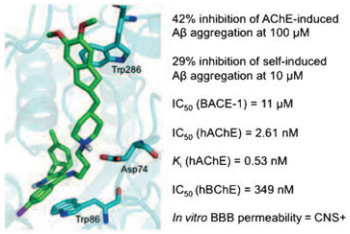
Single Molecules

T. Nishino*

Charge Transport Induced by Formation of a Single Covalent Bond

Quantum leap: A molecular tip of a scanning tunneling microcope is utilized to detect conductance change induced by in situ covalent bond formation between single molecules. Thiol groups of sample and tip molecules form a disulfide linkage, which bridges the gap between the gold tip and the substrate (picture, top). Current jumps take place by electron transport through the molecular bridge, and this electron transport is successfully quantified (picture, bottom).





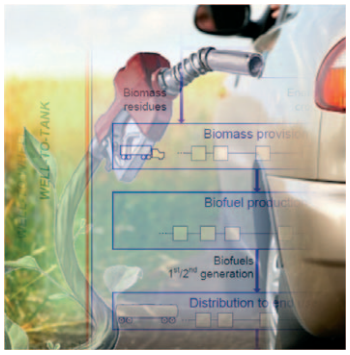
ChemMedChem
DOI: **10.1002/cmdc.201000322**

Drug Design

E. Viayna, T. Gómez, C. Galdeano, L. Ramírez, M. Ratia, A. Badia, M. V. Clos, E. Verdaguer, F. Junyent, A. Camins, M. Pallàs, M. Bartolini, F. Mancini, V. Andrisano, M. P. Arce, M. I. Rodríguez-Franco, A. Bidon-Chanal, F. J. Luque, P. Camps, D. Muñoz-Torrero*

Novel Huprine Derivatives with Inhibitory Activity toward β-Amyloid Aggregation and Formation as Disease-Modifying Anti-Alzheimer Drug Candidates

Unforgettably effective: We synthesized a new family of huprine-based dual binding site acetylcholinesterase inhibitors as multipotent disease-modifying anti-Alzheimer agents. These compounds exhibit a multitarget profile, encompassing potent inhibitory activity toward acetylcholinesterase, moderate inhibitory activity of β-amyloid aggregation, BACE-1, and butyrylcholinesterase, and are predicted to be able to cross the blood–brain barrier.



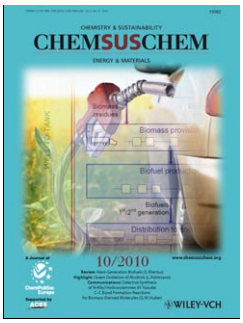
ChemSusChem
DOI: **10.1002/cssc.201000052**

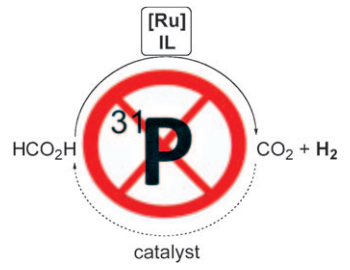
Biofuels

S. Zinoviev, F. Müller-Langer, P. Das, N. Bertero, P. Fornasiero, M. Kaltschmitt, G. Centi, S. Miertus*

Next-Generation Biofuels: Survey of Emerging Technologies and Sustainability Issues

An overview of technical aspects of production technologies for next-generation biofuel is presented. Complemented with their related economical and environmental assessment results, an insight into the sustainability of the technologies, and an analysis of the opportunities and limits of future development, is given.





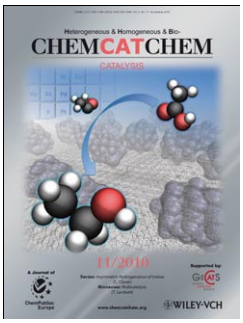
ChemCatChem
DOI: **10.1002/cctc.201000119**

Ionic Liquids

J. D. Scholten, M. H. G. Prechtl, J. Dupont*

Decomposition of Formic Acid Catalyzed by a Phosphine-Free Ruthenium Complex in a Task-Specific Ionic Liquid

Formic acid (FA) dehydrogenation is catalyzed by a phosphine-free Ru complex in an amine-functionalized ionic liquid (IL) at 80 °C (TOFs up to 1540 h^{-1}). Preliminary kinetic insights, the activation energy of the process, and the ionic organometallic species involved in the transformation are also determined. Significant catalytic activity was observed during recycles, indicating the system's potential for hydrogen gas production.

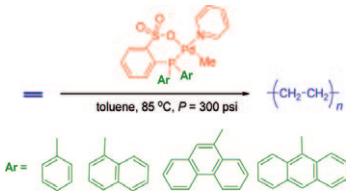


Ethene Polymerization

L. Piche, J.-C. Daigle, R. Poli, J. P. Claverie*

Investigation of Steric and Electronic Factors of (Arylsulfonyl)phosphane-Palladium Catalysts in Ethene Polymerization

Bulky sulfonated arylphosphane ligands were prepared and used to generate (arylsulfonyl)phosphane-palladium complexes. These complexes catalyze ethene polymerization yielding linear polyethene. The relationship between the catalysts' structures and their activity was discussed.



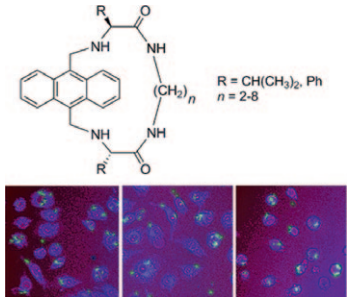
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201000533**

Fluorescent Probes

M. I. Burguete, F. Galindo,* M. A. Izquierdo, J.-E. O'Connor, G. Herrera, S. V. Luis,* L. Vigara

Synthesis and Evaluation of Pseudopeptidic Fluorescence pH Probes for Acidic Cellular Organelles: In Vivo Monitoring of Bacterial Phagocytosis by Multiparametric Flow Cytometry

A new family of anthracenic macrocycles has been synthesized that can act as fluorescent probes for pH in the range 4.6–6.5. The pK_a values of these compounds can be finely tuned. In flow cytometry experiments, it was found that bacterial killing by human monocytes (U937) occurred with a simultaneous drop in pH, which was monitored by one of the macrocyclic sensors.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201000854**

