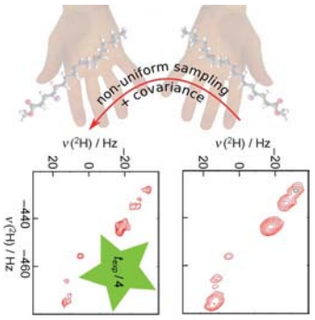
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

NMR Spectroscopy

O. Lafon,* B. Hu, J.-P. Amoureux, P. Lesot*

Fast and High-Resolution Stereochemical Analysis by Nonuniform Sampling and Covariance Processing of Anisotropic Natural Abundance 2D ^{2}H NMR Datasets

^{2}H or not ^{2}H: The combination of nonuniform sampling and covariance transform allows fast and accurate stereochemical analysis of isotopic enantio- and diastereomers (see figure). This general method has permitted the acquisition of high-resolution 2D NMR spectra by using a measurement time at least four times shorter than that required by conventional approaches.



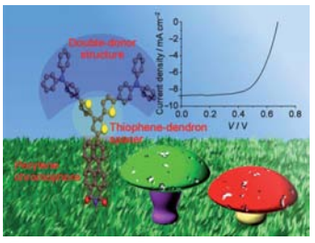
Chem. Eur. J.
DOI: **10.1002/chem.201100461**

Solar Cells

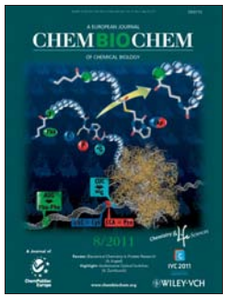
H. Wonneberger, N. Pschirer, I. Bruder, J. Schöneboom, C.-Q. Ma, P. Erk, C. Li,* P. Bäuerle, K. Müllen*

Double Donor-Thiophene Dendron-Perylene Monoimide: Efficient Light-Harvesting Metal-Free Chromophore for Solid-State Dye-Sensitized Solar Cells

Efficient dye-namics: A highly efficient perylene sensitizer ($\eta = 3.8\%$) for solid-state dye-sensitized solar cells was obtained. Key factors for this excellent photovoltaic performance are 1) careful balance of the orbital energies and color tuning, in order to achieve a broad spectrum with high absorptivity, 2) considerate steric architecture, and 3) a sound degree of orbital partitioning.



Chem. Asian J.
DOI: **10.1002/asia.201000895**

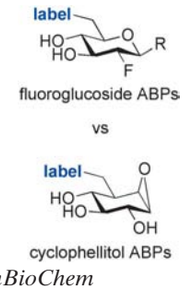


Activity-Based Probes

M. D. Witte, M. T. C. Walvoort, K.-Y. Li, W. W. Kallemeijn, W. E. Donker-Koopman, R. G. Boot, J. M. F. G. Aerts, J. D. C. Codée, G. A. van der Marel,* H. S. Overkleeft*

Activity-Based Profiling of Retaining β-Glucosidases: A Comparative Study

Compare and contrast: 2-Deoxy-2-fluoro glucosides and cyclitol derivatives have been tested for their ability to irreversibly bind to retaining β-glucosidases. One- and two-step labeling protocols are compared, and the superiority of cyclophellitol probes in activity-based protein profiling is established.



ChemBioChem
DOI: **10.1002/cbic.201000773**

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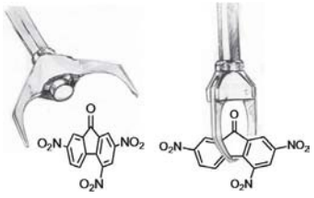


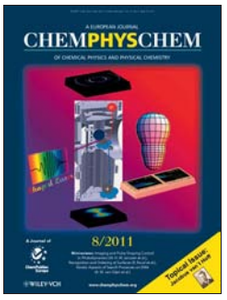
ChemPhysChem
DOI: **10.1002/cphc.201001050**

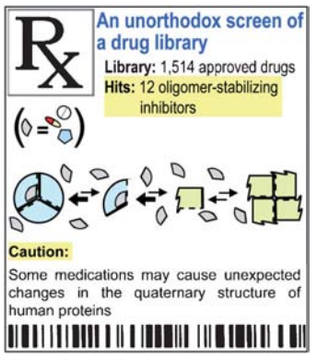
Molecular Tweezers

J. Leblond, A. Petitjean*

Molecular Tweezers: Concepts and Applications

Feeling the pinch: Aimed at controlled substrate binding, molecular tweezers have been engineered to offer a range of flexibility degrees and a variety of interaction sites for substrate binding (see picture). Applications ranging from molecular recognition, molecular electronics and enzyme inhibition to the assembly of complex topological systems and drug carriers are emerging, and show the promise of this very rich field.





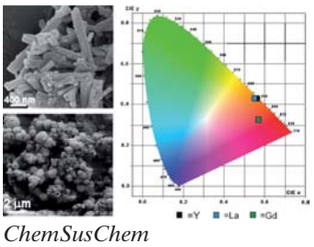
ChemMedChem
DOI: **10.1002/cmdc.201100009**

Drug Discovery

S. H. Lawrence, T. Selwood, E. K. Jaffe*

Diverse Clinical Compounds Alter the Quaternary Structure and Inhibit the Activity of an Essential Enzyme

A shift in the balance: Screening a drug library using a novel in vitro method reveals diverse inhibitors of human porphobilinogen synthase (PBGS) that function by stabilizing a low-activity quaternary structure. Perturbation of quaternary structure equilibria is suggested as a general mechanism for unexpected drug side effects.



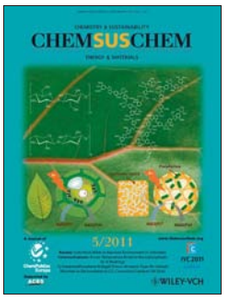
ChemSusChem
DOI: **10.1002/cssc.201100095**

Photophysics

J. Cybinska, C. Lorbeer, E. Zych, A.-V. Mudring*

Ionic Liquid-based Synthesis—A Low-Temperature Route to Nanophosphates

Endless Phossibilities: Microwave synthesis, with phosphate ionic liquids acting as reaction partner, solvent, and in-situ stabilizer all-in-one, allows for a fast, facile, and mild access to nanometer-sized orange–red emitting phosphors. The phosphors show excellent photophysical performance.



ChemCatChem
DOI: **10.1002/cctc.201000449**

Hydrosilylation

K. Muller, A. Schubert, T. Jozak, A. Ahrens-Botzong, V. Schünemann, W. R. Thiel*

Electronic Effects in the Catalytic Hydrosilylation with In-Situ Generated Iron(II)-Catalysts

Electronic effects in electronic worlds: Pyrazole and pyrimidine derived bidentate ligands enable iron(II) catalyzed hydrosilylation of carbonyl compounds in nonpolar solvents with cheap polymethylhydrosiloxane as the silane source.

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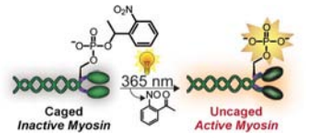
Caged Proteins

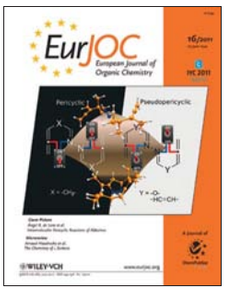
B. N. Goguen, B. D. Hoffman, J. R. Sellers, M. A. Schwartz, B. Imperiali*

Light-Triggered Myosin Activation for Probing Dynamic Cellular Processes

Shining light on myosin: The incorporation of a caging group onto the essential phosphoserine residue of myosin by protein semisynthesis enables light-triggered activation of the protein (see picture). Caging eliminates the myosin activity, but exposure to 365 nm light restores its function to native levels. The caged protein can also be introduced into cells to facilitate studies of myosin with precise spatial and temporal resolution.



Angew. Chem. Int. Ed.
DOI: **10.1002/anie.201100674**

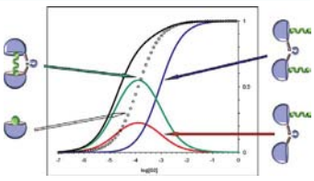


Ditopic Cavitand Complexes

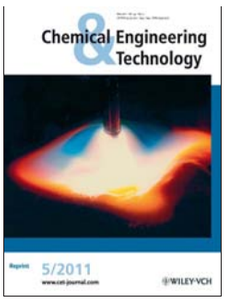
M. Busi, B. Cantadori, F. Boccini, R. De Zorzi, S. Geremia,* E. Dalcanale*

Molecular Recognition with Ditopic Cavitand Re Complexes

Two are better than one: Connecting two triphosphonate cavitands through the formation of a Re complex leads to enhancements in complexation efficiency for ditopic guests relative to their monotopic counterparts.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201001668**

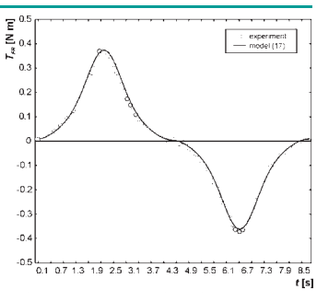


Unsteady Mixing

S. Woziwodzki

Unsteady Mixing Characteristics in a Vessel with Forward-Reverse Rotating Impeller

The mixing process is usually carried out in a baffled vessel. In some applications, however, unbaffled vessels are preferred. The agitation characteristics in a baffled and an unbaffled vessel stirred by a turbine impeller with forward-reverse revolution were studied. Mixing time and mixing power were evaluated in relation to the presence of baffles and the frequency of forward-reverse rotation.



Chem. Eng. Technol.
DOI: **10.1002/ceat.201000455**

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