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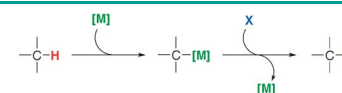


C–H Activation

R. Jazsar, J. Hitce, A. Renaudat, J. Sofack-Kreutzer, O. Baudoin*

Functionalization of Organic Molecules by Transition-Metal-Catalyzed C(sp³)–H Activation

Breaking strong bonds: This Minireview highlights recent strategies to functionalize alkyl C–H bonds by transition-metal-catalyzed C–H activations that involve inner-sphere-type mechanisms. These methods allow the introduction of carbon- or heteroatom-based functional groups and show great promise in the synthesis of complex organic molecules.



Chem. Eur. J.

DOI: 10.1002/chem.200902374

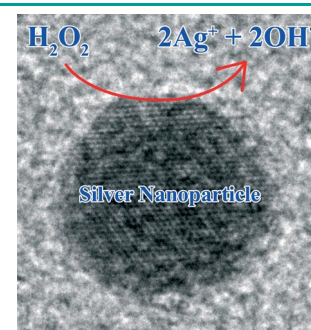


Nanomaterials

C.-M. Ho,* S. K.-W. Yau, C.-N. Lok, M.-H. So, C.-M. Che*

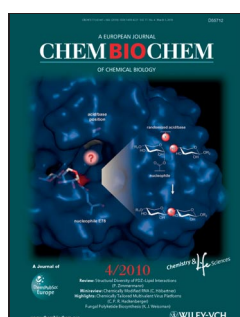
Oxidative Dissolution of Silver Nanoparticles by Biologically Relevant Oxidants: A Kinetic and Mechanistic Study

Hi H₂O₂, silver! Silver nanoparticles can be oxidized by various reactive oxygen species (e.g., H₂O₂, OCl[−]). The kinetics and mechanistic studies of the oxidative dissolution of AgNPs by H₂O₂ in aqueous solution over a physiological pH range of 6.0–8.5 using a stopped-flow technique are reported, and a possible mechanism is proposed.



Chem. Asian J.

DOI: 10.1002/asia.200900387

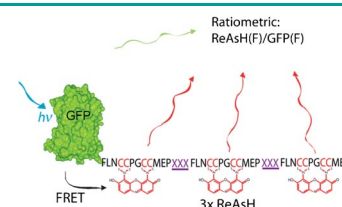


Cell Imaging

S. B. Van Engelenburg, T. Nahreini, A. E. Palmer*

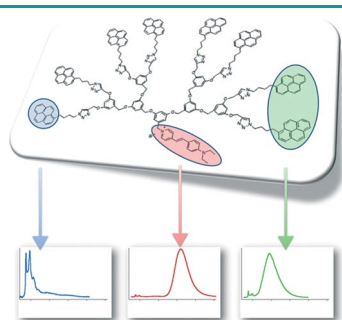
FACS-Based Selection of Tandem Tetracysteine Peptides with Improved ReAsH Brightness in Live Cells

Reintroducing ReAsH: Three tandem tetracysteine motifs were optimized for higher-order biarsenical fluorophore binding and enhanced brightness. FACS-based in vivo selections of peptide linkers uncovered new 3 × tetracysteine motifs with ~2.5-fold increased brightness in vitro and ~twofold increased brightness in live cells.



ChemBioChem

DOI: 10.1002/cbic.200900689



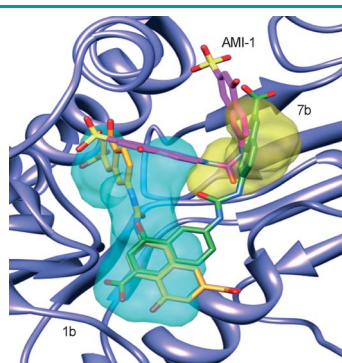
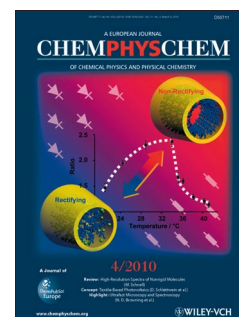
ChemPhysChem
DOI: 10.1002/cphc.200900771

Electroluminescence

U. Giovannella, W. Mróz, P. Foggi, P. Fabbrizzi, S. Cicchi, C. Botta*

Multi-Colour Electroluminescence of Dendronic Antennae Containing Pyrenes as Light Harvesters

Passing the flame: Dendrons containing pyrene moieties that act as light harvesters give multi-colour electroluminescence in spin-coatable single-layer light-emitting diodes through energy-transfer processes from a polyvinylcarbazole matrix (see picture).



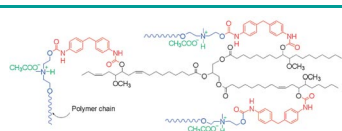
ChemMedChem
DOI: 10.1002/cmdc.200900459

Antitumor Agents

S. Castellano, C. Milite, R. Ragno, S. Simeoni, A. Mai, V. Limongelli, E. Novellino, I. Bauer, G. Brosch, A. Spannhoff, D. Cheng, M. T. Bedford,* G. Sbardella*

Design, Synthesis and Biological Evaluation of Carboxy Analogues of Arginine Methyltransferase Inhibitor 1 (AMI-1)

PRMT inhibitors: The bis-carboxylic acid derivatives **1b** (yellow) and **7b** (green), shown here docked into the active site of protein arginine *N*-methyltransferase 1 (PRMT1), are disclosed as effective inhibitors of this enzyme, both in vitro and in vivo. These carboxy analogues are comparable or even better PRMT inhibitors compared with arginine methyltransferase inhibitor 1 (AMI-1; magenta), and they are practically inactive against the lysine methyltransferase SET7/9.



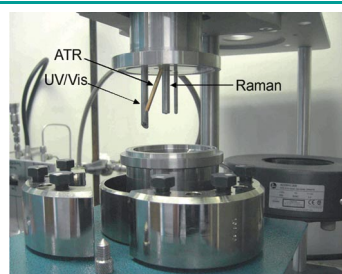
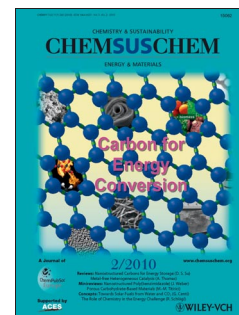
ChemSusChem
DOI: 10.1002/cssc.200900251

Polyurethanes

Y. Lu, R. C. Larock*

Aqueous Cationic Polyurethane Dispersions from Vegetable Oils

Aqueous cationic polyurethane dispersions (PUDs) are synthesized by making use of raw vegetable oils as starting materials. The resulting environmentally friendly PUDs exhibit excellent physical properties, indicating great promise for use as adhesives, plastics, and coatings.



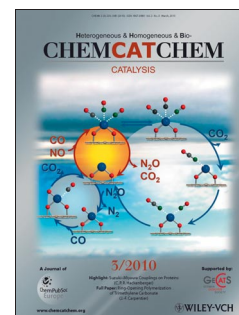
ChemCatChem
DOI: 10.1002/cctc.200900273

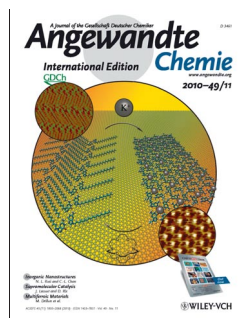
Spectroscopy

L. R. Knöpke, N. Nemati, A. Köckritz, A. Brückner, U. Bentrup*

Reaction Monitoring of Heterogeneously Catalyzed Hydrogenation of Imines by Coupled ATR-FTIR, UV/Vis, and Raman Spectroscopy

Operando spectroscopy: A setup is presented that enables simultaneous in situ ATR-FTIR, UV/Vis, and Raman spectroscopic measurements by implementation of spectroscopic immersion probes into a modified autoclave reactor. This setup allows the monitoring of liquid-phase hydrogenation reactions under elevated H_2 pressures.



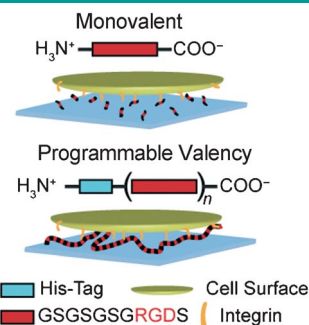


Bioorganic Chemistry

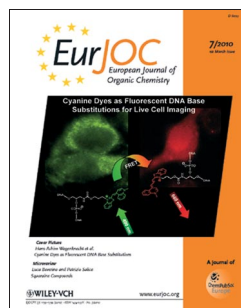
B. W. Lee, R. Schubert, Y. K. Cheung, F. Zannier, Q. Wei, D. Sacchi, S. K. Sia*

Strongly Binding Cell-Adhesive Polypeptides of Programmable Valencies

Longer and stronger: Engineered multivalent polypeptides were used to increase and tune the adhesion strength of cells to surfaces. Monodisperse polypeptides containing programmable valencies of a cell-adhesion sequence were synthesized (with up to 80 repeats of the RGD sequence; see schematic illustration). The multivalent cell-adhesion polypeptides provided strong resistance to cellular delamination under shear.



Angew. Chem. Int. Ed.
DOI: 10.1002/anie.200906482

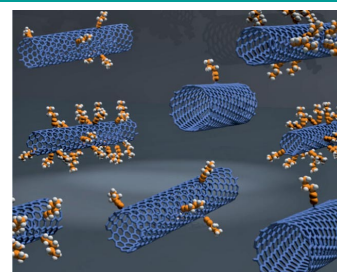


Functionalization of SWCNTs

B. Gebhardt, R. Graupner, F. Hauke, A. Hirsch*

A Novel Diameter-Selective Functionalization of SWCNTs with Lithium Alkynylides

Single-walled carbon nanotubes (SWCNTs) have been functionalized with different terminal lithium acetylides in a nucleophilic addition sequence to yield soluble SWCNT derivatives that have been characterized by TGA/MS, Raman, UV/Vis/NIR and fluorescence spectroscopy. Based on a detailed radial breathing-mode analysis, size-selective sidewall functionalization of small-diameter tubes is revealed.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200900848

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