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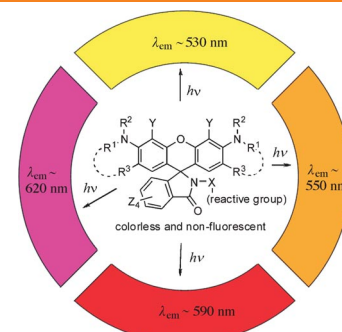


Rhodamines

V. N. Belov,* M. L. Bossi, J. Fölling, V. P. Boyarskiy, S. W. Hell*

Rhodamine Spiroamides for Multicolor Single-Molecule Switching Fluorescent Nanoscopy

A good resolution: New colorless rhodamine spiroamides (see figure) for fluorescence nanoscopy have been designed and used as photoactivable labels in (co)localization studies and to image various bio-objects with a precision of a few tens of nanometers. Multicolor staining, good photoactivation, large number of emitted photons, and selective chemical binding were achieved.



Chem. Eur. J.
DOI: 10.1002/chem.200901333

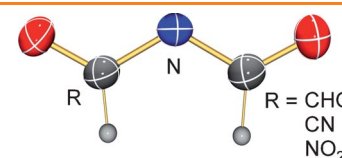


Amides

H. Brand, J. Martens, P. Mayer, A. Schulz,* M. Seibald, T. Soller

Salts and Ionic Liquids of Resonance Stabilized Amides

ILs built tough: The synthesis, structure, and bonding of alkali salts of resonance stabilized amides are discussed on the basis of experimental and theoretical data. Additionally, several novel ionic liquids based on the resonance stabilized amides have been prepared and are fully characterized. These ionic liquids are neither heat nor shock sensitive, are thermally stable up to over 200 °C, and can be prepared easily in large quantities.



Chem. Asian J.
DOI: 10.1002/asia.200900181

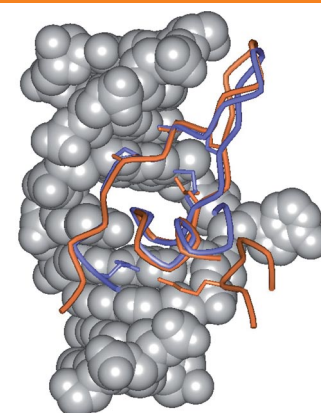


Molecular Evolution

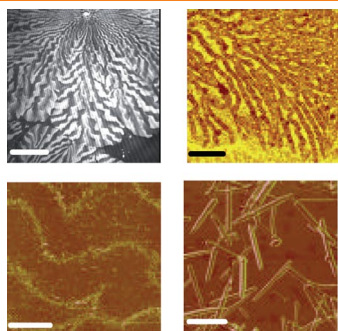
H. Elsayy, S. Podobinski, S. Chahar, A. Jeltsch*

Transition from EcoDam to T4Dam DNA Recognition Mechanism without Loss of Activity and Specificity

Kissing cousins: The EcoDam and T4Dam DNA methyltransferase are related, but deviate in their contact to the first base pair of the target sequence. We have successfully “transplanted” T4Dam DNA recognition into EcoDam and show that one intermediate of this transition is fully active; this indicates that a smooth evolutionary pathway exists between EcoDam and T4Dam. The EcoDam to T4Dam transition might have been driven by selective pressure towards increased catalytic activity.



ChemBioChem
DOI: 10.1002/cbic.200900441



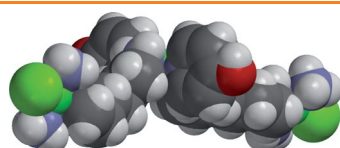
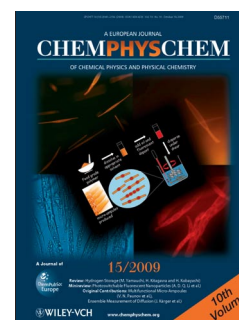
ChemPhysChem
DOI: 10.1002/cphc.200900539

Nanostructures

L. Philosof-Mazor, R. Volinsky, J. Jopp, P. Blumberg, H. Rapaport, V. E. Marquez,* R. Jelinek*

Lipid-Modulated Pharmacophore Nanorods Assembled at the Air/Water Interface

Biomimetic pharmacophores deposited at the air/water interface self-assemble into distinct crystalline nanostructures (see figure). The shapes and dimensions of the nanostructures are significantly modulated by the lipid environments in mixed lipid/DAG-lactone monolayers.



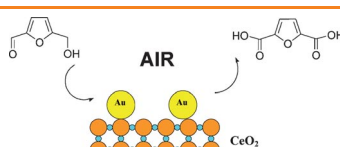
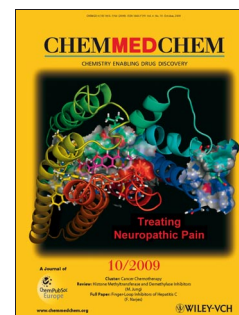
ChemMedChem
DOI: 10.1002/cmdc.200900267

Bioinorganic Chemistry

M. Farhad, J. Q. Yu, P. Beale, K. Fisher, F. Huq*

Studies on the Synthesis and Activity of Three Tripalladium Complexes Containing Planaramine Ligands

Organometallic drugs: Significant antitumor activity can be introduced in trinuclear palladium complexes when their reactivity is lowered by the presence of sterically hindered ligands such as 2-hydroxypyridine, 3-hydroxypyridine and 4-hydroxypyridine bound to the central palladium ion. This hypothesis was tested by the synthesis and evaluation of three novel tripalladium complexes containing planaramine ligands against ovarian cancer cell lines.



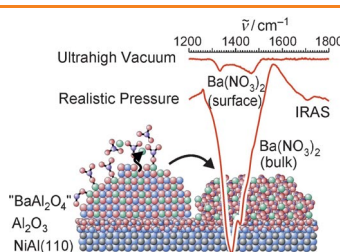
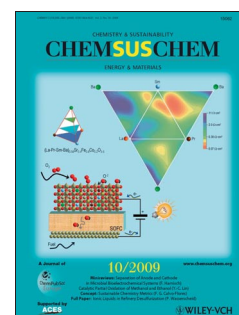
ChemSusChem
DOI: 10.1002/cssc.200900137

Biomass

O. Casanova, S. Iborra, A. Corma*

Biomass into Chemicals: Aerobic Oxidation of 5-Hydroxymethyl-2-furfural into 2,5-Furandicarboxylic Acid with Gold Nanoparticle Catalysts

Cerious chemistry: 5-hydroxymethyl-2-furfural is selectively converted into 2,5-furandicarboxylic acid in water, using air as oxidant, under mild conditions, and with gold nanoparticles supported on nanoparticulate ceria (Au-CeO₂) as catalyst. The catalyst is stable and reusable. Substrate degradation is strongly diminished and catalyst life is increased by performing the reaction in two temperature steps. The catalytic performance of Au-CeO₂ surpasses that of other gold nanoparticle catalysts (e.g., Au-TiO₂, Au-Fe₂O₃).



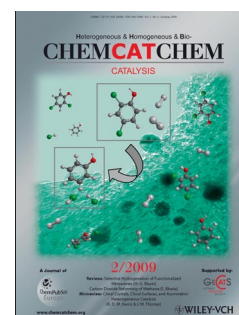
ChemCatChem
DOI: 10.1002/cctc.200900137

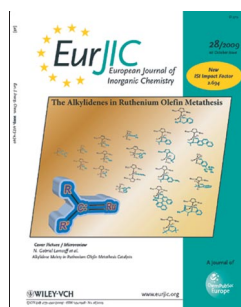
Absorption Spectroscopy

A. Desikusumastuti, S. Schernich, M. Happel, M. Sobota, M. Laurin, J. Libuda*

Model NO_x Storage Materials at Realistic NO₂ Pressures

Never-ending storage: Model systems for NO_x storage and reduction are investigated by in situ time-resolved infrared reflection absorption spectroscopy (IRAS) from ultrahigh vacuum conditions up to realistic NO₂ pressures. The formation of bulk nitrate phases requires very high NO₂ exposures and realistic pressure conditions.



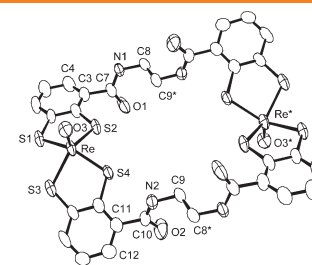


Supramolecular Chemistry

J. S. Gancheff, R. Q. Albuquerque, A. Guerrero-Martínez, T. Pape, L. De Cola, F. E. Hahn*

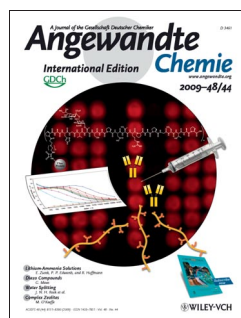
A Dinuclear Double-Stranded Oxido Complex of Re^V with a Bis(benzene-*o*-dithiolato) Ligand

The reaction of [ReOCl₃(PPh₃)₂] with 1,2-bis(2,3-dimercaptobenzamido)ethane (**H₄-1**) leads to the formation of a novel double-stranded dinuclear oxido Re^V complex: [ReO(**1**)]₂²⁻. DFT calculations were performed to gain insight into the structural and electronic properties of the complex anion.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.200900496

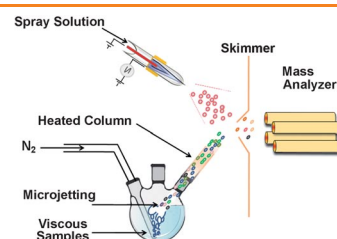


Mass Spectrometry

W. S. Law, H. Chen,* J. Ding, S. Yang, L. Zhu, G. Gamez, K. Chingin, Y. Ren, R. Zenobi*

Rapid Characterization of Complex Viscous Liquids at the Molecular Level

Sticky subject: An N₂ stream forms bubbles inside bulk viscous liquids, which create an aerosol sample through a microjetting mechanism (see picture). This aerosol is then analyzed by extractive electrospray ionization (EESI) mass spectrometry (MS). EESI-MS reveals the molecular composition of complex liquids and the kinetics of ongoing processes occurring in the highly viscous liquids without any sample pretreatment.



Angew. Chem. Int. Ed.

DOI: 10.1002/anie.200902360

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