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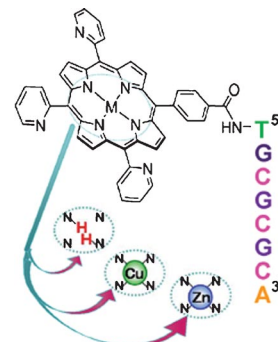


Helical Structures

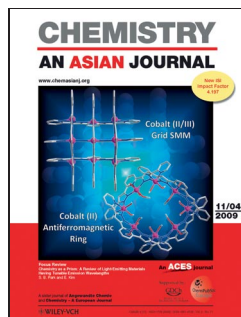
A. Mammana, G. Pescitelli, T. Asakawa, S. Jockusch, A. G. Petrovic, R. R. Monaco, R. Purrello, N. J. Turro, K. Nakanishi, G. A. Ellestad,* M. Balaz,* N. Berova*

Role of Environmental Factors on the Structure and Spectroscopic Response of 5'-DNA-Porphyrin Conjugates Caused by Changes in the Porphyrin-Porphyrin Interactions

A new twist: We show that CD is a remarkably sensitive and diagnostic method for the detection of conformational and supramolecular changes of porphyrin-DNA conjugates as a function of ionic strength. This is supported by a theoretical explanation of the differences in porphyrin-porphyrin interactions as revealed by the complicated exciton-coupled CD profiles as well as by fluorescence and resonance light scattering response.



Chem. Eur. J.
DOI: 10.1002/chem.200902029

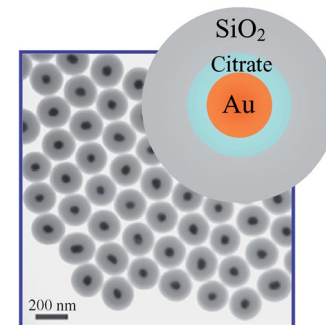


Nanostructures

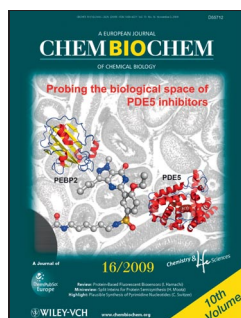
S. Liu, M.-Y. Han*

Silica-Coated Metal Nanoparticles

Remember your coat! The up-to-date synthesis strategies, improved properties, and emerging applications of silica-coated metal nanoparticles are discussed. In particular, the large scale synthesis of silica-coated metal nanoparticles and the recent development of hollowed-out silica-coated metal nanoparticles by silica dissolution are emphasized for new and practical applications.



Chem. Asian J.
DOI: 10.1002/asia.200900228

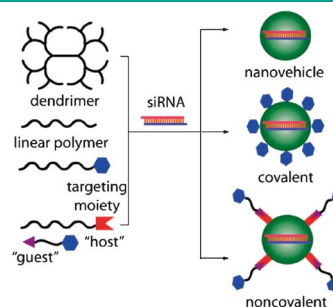


siRNA Delivery

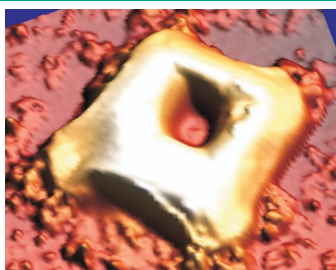
H. Baigude, T. M. Rana*

Delivery of Therapeutic RNAi by Nanovehicles

Designer packaging: Nanovehicles created from cationic polymers and anionic oligonucleotides through electrostatic interaction play a most important role in nonviral siRNA delivery. The type and content of amine in the polymer determine the hydrophobicity, surface charge, and particle size of resulting nanovehicle. Targeted delivery may be achieved by modifying the nanovehicle by coupling moieties that bind specific cell surface receptors.



ChemBioChem
DOI: 10.1002/cbic.200900252



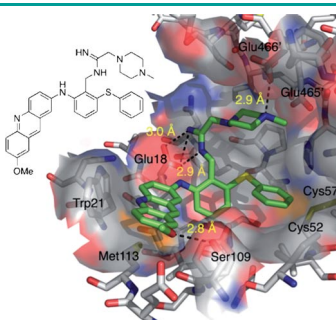
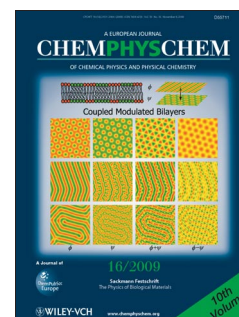
ChemPhysChem
DOI: 10.1002/cphc.200900634

SERS in Salt Wells

G. V. P. Kumar, J. Irudayaraj*

SERS in Salt Wells

Salty SERS: Microscopic containers of nanoparticles are shown to self-assemble in salt wells (see picture). These microwells loaded with plasmonic nanoparticles are harnessed for low-volume, highly sensitive surface-enhanced Raman detection of biomolecules, and show immense promise in achieving soft-material platforms for optically assisted proteomics and genomics.



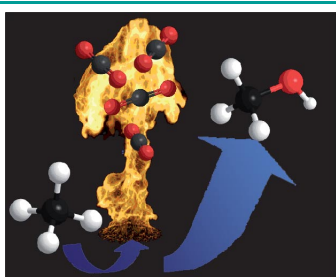
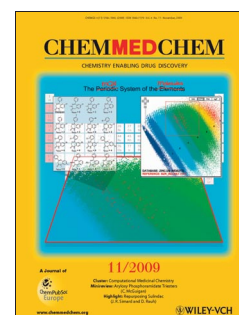
ChemMedChem
DOI: 10.1002/cmdc.200900327

Drug Discovery

C. Eberle, J. A. Burkhard, B. Stump, M. Kaiser, R. Brun, R. L. Krauth-Siegel, F. Diederich*

Synthesis, Inhibition Potency, Binding Mode, and Antiprotozoal Activities of Fluorescent Inhibitors of Trypanothione Reductase Based on Mepacrine-Conjugated Diaryl Sulfide Scaffolds

Computer aided design of acridine-based trypanothione reductase (TR) inhibitors led to selective fluorescent compounds with K_{ic} values as low as $0.9 \pm 0.1 \mu\text{M}$. Fluorescence microscopy experiments revealed a high accumulation of the compounds in *T. b. rhodesiense*. Most of the newly prepared ligands exhibit good in vitro activity against the protozoan parasites *T. b. rhodesiense*, *T. cruzi*, and *P. falciparum*.



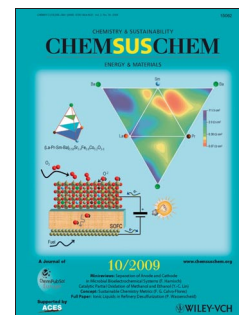
ChemSusChem
DOI: 10.1002/cssc.200900123

Methane Oxidation

R. Palkovits, C. von Malotki, M. Baumgarten, K. Müllen, C. Baltes, M. Antonietti, P. Kuhn, J. Weber, A. Thomas, F. Schüth*

Development of Molecular and Solid Catalysts for the Direct Low-Temperature Oxidation of Methane to Methanol

The direct low-temperature oxidation of methane to methanol is demonstrated on both a highly active homogeneous molecular catalyst and on heterogeneous molecular catalysts based on polymeric materials. Superior activities are achieved and some heterogeneous systems maintain stability and activity for several catalytic cycles.



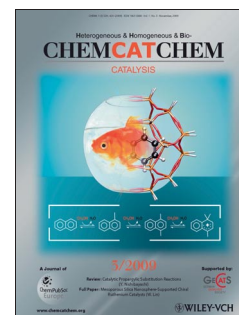
ChemCatChem
DOI: 10.1002/cctc.200900188

Supported Catalysts

D. J. Mihalcik, W. Lin*

Mesoporous Silica Nanosphere-Supported Chiral Ruthenium Catalysts: Synthesis, Characterization, and Asymmetric Hydrogenation Studies

Ru on MSN? Chiral RuCl_2 -diphosphine-diamine complexes with a pendant siloxy group are grafted onto three different types of mesoporous silica nanospheres (MSNs), and the resulting MSN-supported Ru catalysts are highly active for asymmetric hydrogenation of aromatic ketones and racemic arylaldehydes, to afford chiral secondary alcohols and chiral primary alcohols, respectively.



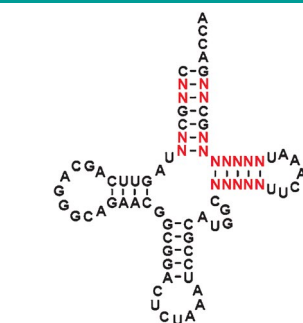


tRNA

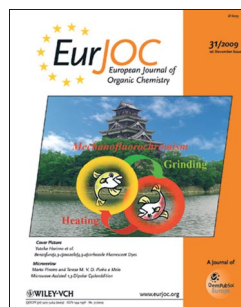
J. Guo, C. E. Melançon, III, H. S. Lee, D. Groff, P. G. Schultz*

Evolution of Amber Suppressor tRNAs for Efficient Bacterial Production of Proteins Containing Nonnatural Amino Acids

Applied evolution: Regions of the *M. jannaschii* tyrosyl tRNA_{CUA} thought to interact with elongation factor Tu were randomized, and the resulting tRNA libraries were subjected to in vitro evolution. The tRNAs identified resulted in significantly improved yields of proteins containing nonnatural amino acids. In some cases, the degree of improvement varied in an amino acid dependent manner.



Angew. Chem. Int. Ed.
DOI: 10.1002/anie.200904035

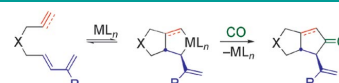


Cycloaddition Reactions

M. P. Croatt, P. A. Wender*

The Diene Effect: The Design, Development, and Mechanistic Investigation of Metal-Catalyzed Diene-yne, Diene-ene, and Diene-allene [2+2+1] Cycloaddition Reactions

This review covers the design and development aspects of the recently reported [2+2+1] reactions of dienes tethered to alkynes, alkenes, and allenes. The dienes in these reactions were found to behave very differently than other π -systems and accelerated or enabled the respective [2+2+1] reactions. Additionally, mechanistic insights into these reactions and a synthetic application of the diene-ene [2+2+1] reaction are presented.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200900929

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