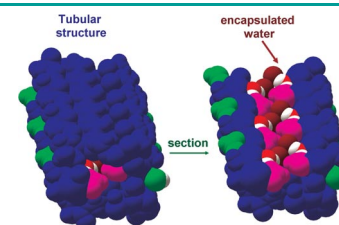


Metal–Organic Framework

J.-N. Rebilly, J. Bacsá, M. J. Rosseinsky*

1D Tubular and 2D Metal–Organic Frameworks Based on a Flexible Amino Acid Derived Organic Spacer

Flexible, yet rigid! A ligand derived from glutamic acid generates chiral MOF architectures ranging from 1D to 2D that are organized in the crystal through a complex hierarchy of coordination and hydrogen bonds that include encapsulation of solvent molecules. The flexibility of the ligand backbone gives access to several topologies and dimensionalities depending on the type of metal center used in the synthesis.



Chem. Asian J.
DOI: 10.1002/asia.200900078

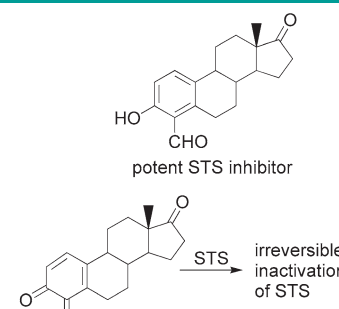


Inhibitors

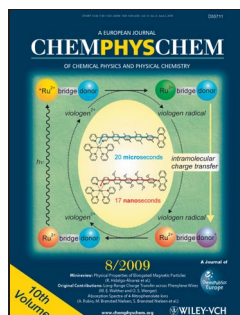
V. Ahmed, Y. Liu, S. D. Taylor*

Multiple Pathways for the Irreversible Inhibition of Steroid Sulfatase with Quinone Methide-Generating Suicide Inhibitors

Unexpected inhibition: 2- and 4-mono- and difluoromethyl estrone sulfate derivatives are suicide inhibitors of steroid sulfatase (STS). Kinetic studies suggest that inhibition by the monofluoro derivatives is a result of a quinone methide intermediate that reacts with active-site nucleophiles, whereas the main inhibition pathway of the 4-difluoromethyl derivative is a result of decomposition of the initial quinone methide to an aldehyde that acts as potent, almost irreversible inhibitor.



ChemBioChem
DOI: 10.1002/cbic.200900143

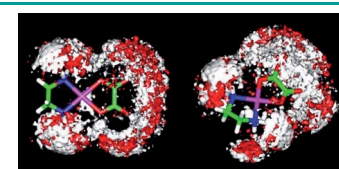


Molecular Dynamics

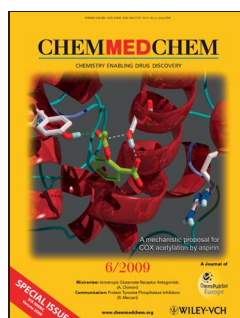
E. C. Beret, R. R. Pappalardo, D. Marx, E. Sánchez Marcos*

Characterizing Pt-Derived Anticancer Drugs from First Principles: The Case of Oxaliplatin in Aqueous Solution

Anionic hydration: Ab initio molecular dynamics simulations help to obtain a microscopic description of the behavior of oxaliplatin anticancer drug in bulk water (see picture). Its hydration structure is closely related to that previously found for Pt^{II} aqua ion and derives from the presence of a square-planar motif around the metal center.



ChemPhysChem
DOI: 10.1002/cphc.200900027

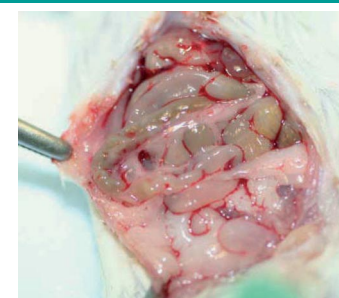


Silver Nanoparticles

K. K. Y. Wong,* S. O. F. Cheung, L. Huang, J. Niu, C. Tao, C.-M. Ho, C.-M. Che, P. K. H. Tam

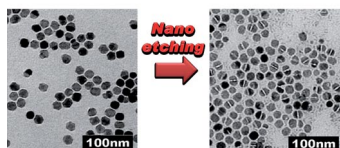
Further Evidence of the Anti-inflammatory Effects of Silver Nanoparticles

The production of pure silver in nanoparticle size has opened new dimensions in the clinical use of this precious metal. We and others have demonstrated previously that silver nanoparticles (nAg) possess efficient antimicrobial activity. Herein we show they may also have significant anti-inflammatory effects in a postoperative peritoneal adhesion model. This finding provides further insight into the biological actions of nAg as well as a potentially novel therapy for peritoneal adhesions in clinical surgery.



ChemMedChem
DOI: 10.1002/cmdc.200900049

Single-Crystalline Fe₃O₄? No!



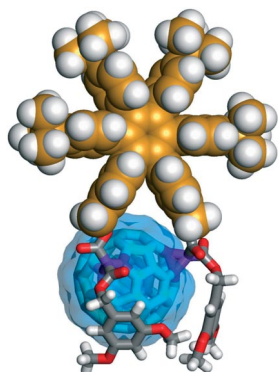
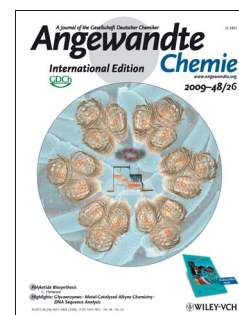
Angew. Chem. Int. Ed.
DOI: 10.1002/anie.200900083

Nanoparticle Crystallinity

H. Kim, M. Lee, Y. Kim, J. Huh, H. Kim, M. Kim, T. Kim, V. N. Phan, Y.-B. Lee, G.-R. Yi, S. Haam, K. Lee*

Quantitative Assessment of Nanoparticle Single Crystallinity: Palladium-Catalyzed Splitting of Polycrystalline Metal Oxide Nanoparticles

Crystal gazing: A simple Pd-catalyzed site-specific nanoetching method was developed to visualize the polycrystalline nature of Fe₃O₄ (see picture), Fe₂O₃, MnFe₂O₄, CoFe₂O₄, and MnO nanoparticle systems. The technique relies on the very fast etching speed of the grain interface within bi- or polycrystalline nanocrystals.



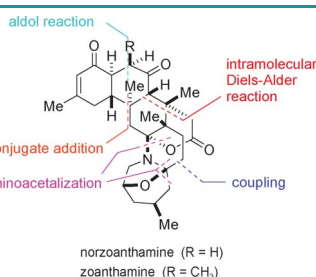
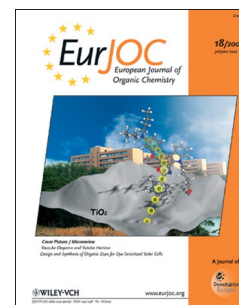
Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200900290

Fullerene Chemistry

T. M. Figueira-Duarte, A. Gégout, J. Olivier, F. Cardinali, J.-F. Nierengarten*

Bismalonates Constructed on a Hexaphenylbenzene Scaffold for the Synthesis of Equatorial Fullerene Bisadducts

Macrocyclization of C₆₀ with bismalonate derivatives built on a hexaphenylbenzene scaffold gives *equatorial* fullerene bisadducts with excellent regioselectivity.



Chem. Eur. J.
DOI: 10.1002/chem.200900310

Natural Products

F. Yoshimura, M. Sasaki, I. Hattori, K. Komatsu, M. Sakai, K. Tanino, M. Miyashita*

Synthetic Studies of the Zoanthamine Alkaloids: The Total Syntheses of Norzoanthamine and Zoanthamine

Highly effective: We report herein the first and highly efficient total syntheses of norzoanthamine and zoanthamine in full detail, which involves stereoselective synthesis of the requisite triene for an intramolecular Diels–Alder reaction via three-component coupling reactions, the intramolecular Diels–Alder reaction, and subsequent crucial bis-aminoacetalization as the key steps.



ChemSusChem
DOI: 10.1002/cssc.200900047

Biofuels

F. Zaccheria, S. Brini, R. Psaro, N. Scotti, N. Ravasio*

Esterification of Acidic Oils over a Versatile Amorphous Solid Catalyst

An amorphous SiO₂–ZrO₂ catalyst shows high activity in the esterification of free fatty acids contained in vegetable oils while at the same time promoting the transesterification of triglycerides. The catalyst is hence a good candidate for a low-waste deacidification pretreatment or for a one-pot biodiesel production process starting from oils with a high acid content.

