

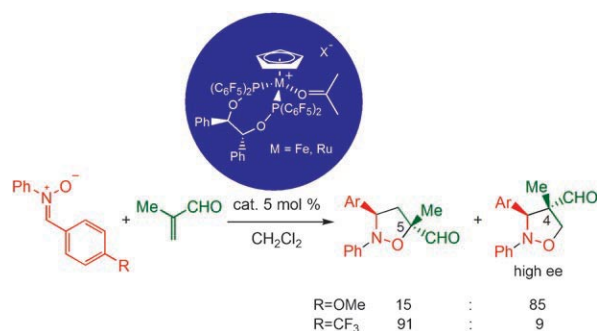
Asymmetric Cycloaddition

A. Bădoiu, G. Bernardinelli,
J. Mareda, E. P. Kündig,* F. Viton

Iron- and Ruthenium-Lewis Acid Catalyzed Asymmetric 1,3-Dipolar Cycloaddition Reactions between Enals and Diaryl Nitrones

Chem. Asian J.

DOI: 10.1002/asia.200800063



The ol' switcheroo! A judicious catalyst design using Lewis acids makes catalysis possible for a difficult reaction involving nitrones. Reaction with Fe- and Ru-Lewis acid catalysts not

only occurs with high *endo* selectivity and asymmetric induction, but also features an interesting switch of regiochemistry upon variation of the nitrone's electronic properties.

Biosynthesis

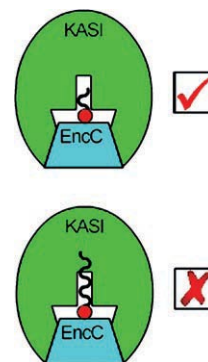
A. S. Worthington, G. H. Hur,
J. L. Meier, Q. Cheng, B. S. Moore,
M. D. Burkart*

Probing the Compatibility of Type II Ketosynthase–Carrier Protein Partners

ChemBioChem

DOI: 10.1002/cbic.200800198

Playing nicely: Post-translational modification of the acyl carrier protein with a panel of functionalized CoA molecules affords activated species that are capable of site-directed cross-linking with ketosynthase enzymes. This method provides a handle to probe substrate tolerance and protein–protein interactions within both natural and combinatorial biosynthetic systems.



Ionic Liquids

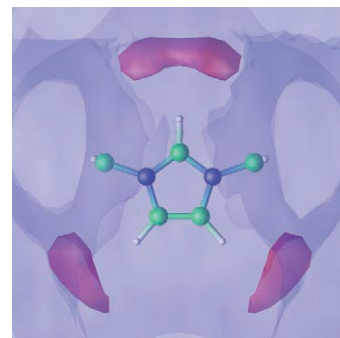
T. G. A. Youngs,* C. Hardacre

Application of Static Charge Transfer within an Ionic-Liquid Force Field and Its Effect on Structure and Dynamics

ChemPhysChem

DOI: 10.1002/cphc.200800200

Ionic-liquid models in which the ionic charges are assumed to be $\pm 1 e$ overestimate the intermolecular attractions between ions. The use of scaled-charge sets may be of benefit in the simulation of such systems (see image), thus providing an alternative to computationally expensive polarizable force fields.



Pharmacophore Mapping

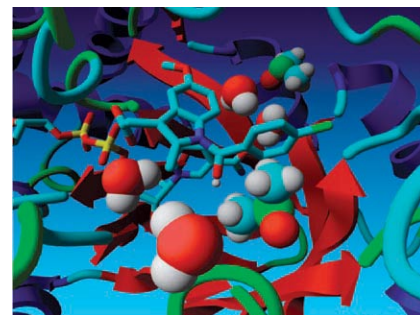
C. Ludwig, P. J. A. Michiels, A. Lodi,
J. Ride, C. Bunce, U. L. Günther*

Evaluation of Solvent Accessibility Epitopes for Different Dehydrogenase Inhibitors

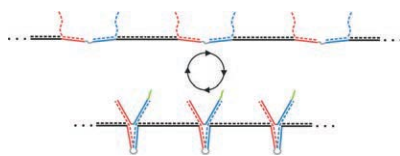
ChemMedChem

DOI: 10.1002/cmdc.200800110

Solvent accessibility mapping can be used to characterize protein–ligand interactions. Herein, we critically evaluate the applicability of solvent accessibility mapping to derive binding orientations for ligands of two dehydrogenases (AKR1C3 and HSD17β1) with very different binding pockets, including complexes in which the ligand is buried more deeply inside the protein.



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Machine tool: A molecular machine built from DNA utilizes the cooperative actions of many molecular tweezers units to achieve larger-scale movements. The device is able to contract to 75 % of its fully extended length (see picture), is driven by a set of two “fuel” strands, and can be cycled.

Molecular Devices

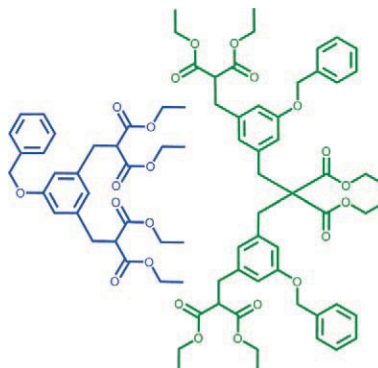
D. Lubrich,* J. Lin, J. Yan

A Contractile DNA Machine

Angew. Chem. Int. Ed.

DOI: [10.1002/anie.200800476](https://doi.org/10.1002/anie.200800476)

The syntheses of first-generation dendritic tetraesters from bifunctional precursors was performed in heterogeneous reaction media under microwave and/or ultrasonic irradiation in reaction times as short as 15 min and with yields around 70 %.



Dendrimer Synthesis

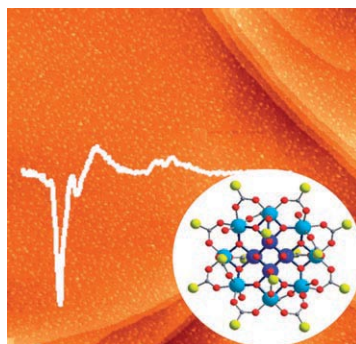
F. Wiesbrock, C. Patteux,
T. K. Olszewski, A. Blanrue,
G. A. Heropoulos,* B. R. Steele,
M. Micha-Screttas,
T. Calogeropoulou*

Solution-Phase Synthesis of First-Generation Tetraester Dendritic Branches Involving Microwave and/or Ultrasonic Irradiation

Eur. J. Org. Chem.

DOI: [10.1002/ejoc.200800325](https://doi.org/10.1002/ejoc.200800325)

Cold experiments: The first low temperature XAS/XMCD study of Mn_{12} adsorbates on gold reveals an intrinsic redox-instability of the clusters (see figure) and highlights the potential of the XAS/XMCD technique to probe the behaviour of molecular magnets at surfaces.



Molecular Magnets

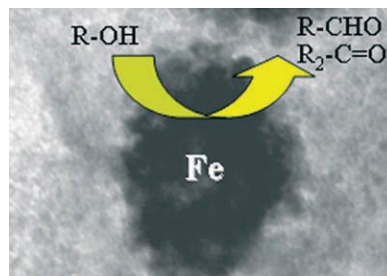
M. Mannini, Ph. Saintavitt,
R. Sessoli, Ch. Cartier dit Moulin,
F. Pineider, M.-A. Arrio, A. Cornia,
D. Gatteschi*

XAS and XMCD Investigation of Mn_{12} Monolayers on Gold

Chem. Eur. J.

DOI: [10.1002/chem.200800693](https://doi.org/10.1002/chem.200800693)

The iron revolution: Highly active and stable iron nanoparticles have been prepared on a range of supports using a facile and environmentally friendly microwave approach. The inexpensive metallic iron nanoparticles were found to be extremely active and selective in the oxidation of various alcohols, achieving excellent turnover numbers. Fe/MCM-41 was found to be highly reusable, preserving and even slightly increasing its activity after several uses.



Heterogeneous Catalysis

C. González-Arellano, J. M. Campelo,
D. J. Macquarrie, J. M. Marinas,
A. A. Romero, R. Luque*

Efficient Microwave Oxidation of Alcohols Using Low-Loaded Supported Metallic Iron Nanoparticles

ChemSusChem

DOI: [10.1002/cssc.200800113](https://doi.org/10.1002/cssc.200800113)



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