

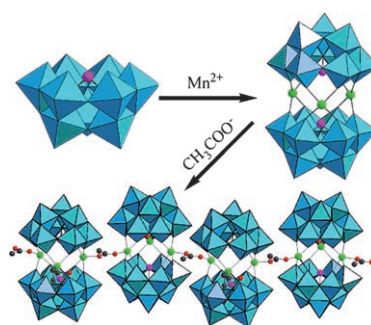
Polyoxometalates

J.-P. Wang, P.-T. Ma, J. Li, H.-Y. Niu, J.-Y. Niu*

Self-Assembly of $[B-SbW_9O_{33}]^{9-}$ Subunit with Transition Metal Ions (Mn^{2+} , Cu^{2+} , Co^{2+}) in Aqueous Solution: Syntheses, Structures and Magnetic Properties of Sandwich Type Polyoxometalates with Subvalent Sb^{III} Heteroatom

Chem. Asian J.

DOI: 10.1002/asia.200700363



Fast-food chains: A series of new 1D, 2D, or 3D extended structural sandwiched compounds built from $B-\alpha-[SbW_9O_{33}]^{9-}$ or $B-\beta-[SbW_9O_{33}]^{9-}$ building blocks (see figure) can be prepared by rational self-assembly being interconnected by either a carboxylate-bridge or a transition-metal covalent bond.

Directed Evolution

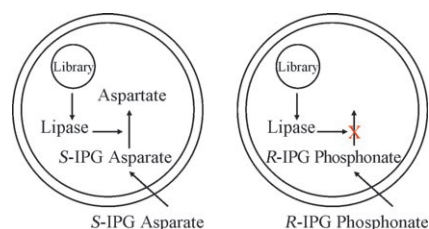
Y. L. Boersma, M. J. Dröge, A. M. van der Sloot, T. Pijning, R. H. Cool, B. W. Dijkstra, W. J. Quax*

A Novel Genetic Selection System for Improved Enantioselectivity of *Bacillus subtilis* Lipase A

ChemBioChem

DOI: 10.1002/cbic.200700754

Enhancing enzyme enantioselectivity: A novel method for selecting enzymes with altered enantioselectivity was developed. A mutant library of lipases transformed to an *E. coli* aspartate auxotroph was grown on (S)-(+)-IPG-aspartate ester. Dual selection by using an (R)-(-)-IPG phosphonate inhibitor was shown to increase selection pressure towards improved enantioselectivity to (S)-(+)-IPG.



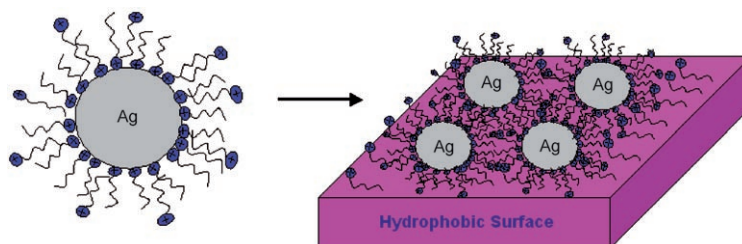
Nanocavities

M. Kahraman, N. Tokman, M. Çulha*

Silver Nanoparticle Thin Films with Nanocavities for Surface-Enhanced Raman Scattering

ChemPhysChem

DOI: 10.1002/cphc.200800007



Nanocavities: The presence of nanometer-sized gaps between silver nanoparticles is critical for optimum enhancement in surface-enhanced Raman scattering (SERS). In thin films prepared on hydro-

phobic surfaces from concentrated silver colloidal suspensions, such gaps are generated using cationic surfactant molecules as spacers (see picture).

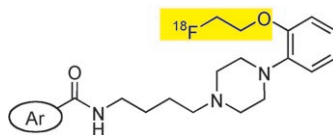
Imaging Agents

C. Hocke,* O. Prante, I. Salama, H. Hübner, S. Löber, T. Kuwert, P. Gmeiner

^{18}F -Labeled FAUC 346 and BP 897 Derivatives as Subtype-Selective Potential PET Radioligands for the Dopamine D3 Receptor

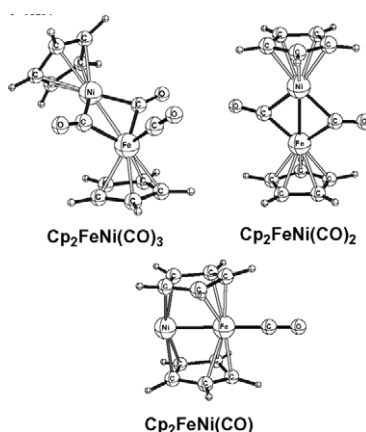
ChemMedChem

DOI: 10.1002/cmdc.200700327



The dopamine D3 receptor has attracted special attention in recent year because of its potential importance in psychiatric illness. However, there exists a lack of subtype-selective ligands for the D3 receptor. Based on 3D-QSAR models predicting subtype selectivities of dopaminergic test compounds, the $[^{18}F]$ labeled D3 receptor ligands $[^{18}F]4a-d$ were synthesized and tested in vitro.

Using density functional theory (BP86) the global minima of both $\text{Cp}_2\text{FeNi}(\text{CO})_3$ and $\text{Cp}_2\text{FeNi}(\text{CO})_2$ are found to have two bridging CO groups. The coaxial structure of $\text{Cp}_2\text{FeNi}(\text{CO})$ prefers an open-shell high spin state whereas the isoelectronic $\text{Cp}_2\text{Co}_2(\text{CO})$ prefers a closed shell state with a $\text{Co}\equiv\text{Co}$ triple bond. However, the global minimum for the monocarbonyl is a singlet perpendicular $\text{Cp}_2\text{FeNi}(\text{CO})$ structure with an iron-bonded terminal CO group.

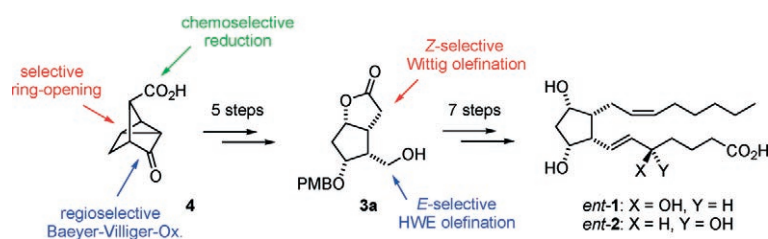


Multiple Metal–Metal Bonds

J. D. Zhang, Z. Chen, R. B. King, H. F. Schaefer, I.

Comparison of Isoelectronic Heterometallic and Homometallic Binuclear Cyclopentadienylmetal Carbonyls: The Iron–Nickel vs. the Dicobalt Systems

Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.200701065



The all-*cis* substituted Corey lactone analogue **3a** was synthesized by a five-step sequence starting from enantiomerically pure nortricyclanone **4**. Further applica-

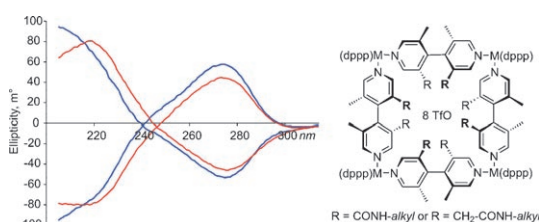
tion of this chiral building block is demonstrated in the total syntheses of two diastereomeric isoprostanes belonging to the 5- F_2 family (*ent-1* and *ent-2*).

Isoprostane Synthesis

P. Elsner, P. Jetter, K. Brödner, G. Helmchen*

Stereoselective Synthesis of a *cis*-1,2-Dialkylcyclopentane Building Block and Its Application in Isoprostane Synthesis (5-*ent*- F_{2c} -IsoP)

Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200800010



A preferred choice: Prochiral 3,3',5,5'-tetramethyl-4,4'-bipyridine can be converted into two types of axially chiral 4,4'-bipyridine compounds, separable into enantiomers by chiral HPLC. The obtained enantiopure bipyridines were sufficiently

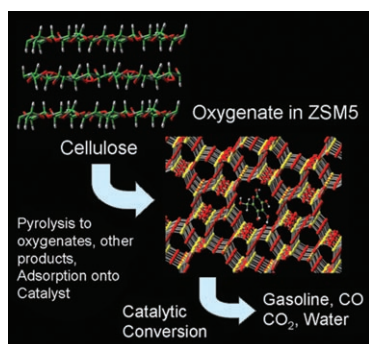
stable in solution to be used in the self-assembly of chiral metallo-supramolecular squares, which reveal a remarkable preference for one of ten possible structures.

Supramolecular Chemistry

A. Rang, M. Engeser, N. M. Maier, M. Nieger, W. Lindner, C. A. Schalley*

Synthesis of Axially Chiral 4,4'-Bipyridines and Their Remarkably Selective Self-Assembly into Chiral Metallo-Supramolecular Squares

Chem. Eur. J.
DOI: 10.1002/chem.200800113



A fuelling success: High-quality aromatic fuel additives can be produced directly from solid biomass feedstocks by catalytic fast pyrolysis in a single catalytic reactor at short residence times. High heating rates and catalyst-to-feed ratios are needed to ensure that pyrolyzed biomass compounds enter the pores of the ZSM5 catalyst and that thermal decomposition is avoided. Product selectivity is a function of the active site and pore structure of the catalyst.

Heterogeneous Catalysis

T. R. Carlson, T. P. Vispute, G. W. Huber*

Green Gasoline by Catalytic Fast Pyrolysis of Solid Biomass Derived Compounds

ChemSusChem
DOI: 10.1002/cssc.200800018