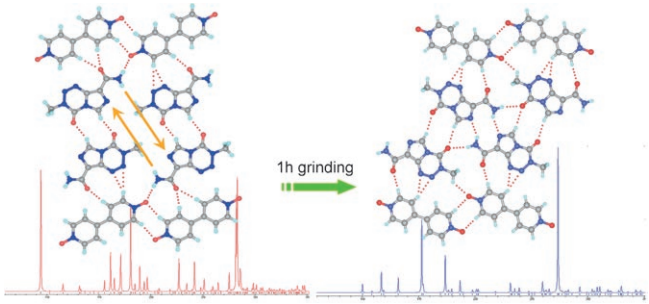
Crystal Polymorphism

N. J. Babu, L. S. Reddy, S. Aitipamula, A. Nangia*

Polymorphs and Polymorphic Cocrystals of Temozolomide

Chem. Asian J.
DOI: **10.1002/asia.200800070**



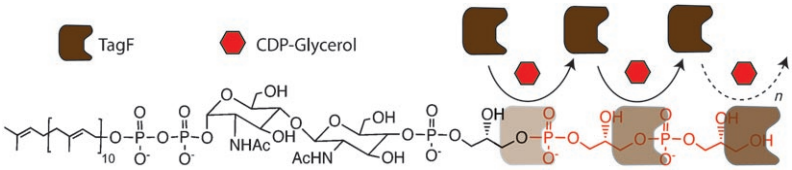
How to morph: Unused hydrogen-bond donors/acceptors in 2:1 temozolomide·4,4′-bipyridine-*N*,*N*′-dioxide cocrystals (orange arrows) form intermolecular N–H···N bonds in the stable polymorph (right). The structural origins of synthon polymorphism in cocrystals are remarkably similar to those of polymorphs.

Teichoic Acid

M. P. Pereira, J. W. Schertzer, M. A. D'Elia, K. P. Koteva, D. W. Hughes, G. D. Wright, E. D. Brown*

The Wall Teichoic Acid Polymerase TagF Efficiently Synthesizes Poly(glycerol phosphate) on the TagB Product Lipid III

ChemBioChem
DOI: **10.1002/cbic.200800026**



One piece at a time: Glycerol phosphate polymerization by the TagF enzyme is investigated through the use of a synthetic analogue of a teichoic acid intermediate. Analysis of polymerization products and reaction kinetics of the enzyme suggest a distributive assembly of the teichoic acid polymer on the TagB product lipid III.

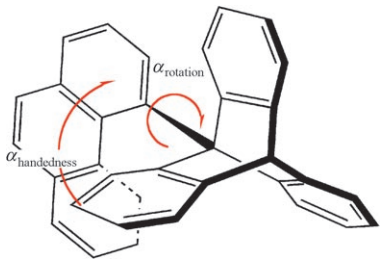
Molecular Machines

M. Llunell, P. Alemany,* J. M. Bofill*

Conformational Analysis of Molecular Machines: Internal Rotation and Enantiomerization in Triptycyl[3]helicene

ChemPhysChem
DOI: **10.1002/cphc.200800052**

No independent rotation: Detailed analysis of the PES for triptycyl[3]helicene shows that rotation around the helicene–triptycyl bond cannot be considered independently from other degrees of freedom when analyzing its stereodynamic behavior. The possibility of enantiomerization of the helicene pawl results in more complex dynamics than previously expected.

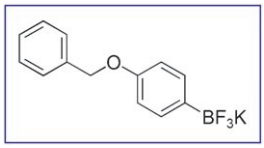


Drug Design

N. Lecat-Guillet, Y. Ambroise*

Discovery of Aryltrifluoroborates as Potent Sodium/Iodide Symporter (NIS) Inhibitors

ChemMedChem
DOI: **10.1002/cmdc.200800049**



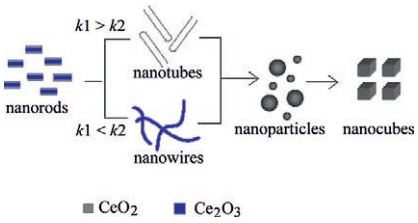
The structure-based design of sodium/iodide symporter (NIS) inhibitors identified new active compounds. The organotrifluoroborate shown was found to inhibit iodide uptake with an IC_{50} value of 0.4 μM on rat-derived thyroid cells. The biological activity is rationalized by the presence of the BF_3^- ion as a minimal binding motif for substrate recognition at the iodide binding site.

Controllable Ceria Nanostructures

C. Pan, D. Zhang,* L. Shi,* J. Fang

Template-Free Synthesis, Controlled Conversion, and CO Oxidation Properties of CeO_2 Nanorods, Nanotubes, Nanowires, and Nanocubes

Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200800047**



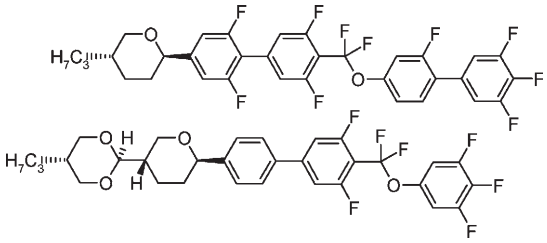
A template-free method is employed first to synthesize single-crystal CeO_2 nanorods at room temperature and pressure, and then the controlled conversion of nanorods into nanotubes, nanowires, and nanocubes is realized. Finally, CO oxidation properties of CeO_2 nanostructures were investigated systematically and CeO_2 nanorods were found to have excellent catalytic performance.

Fluorinated Liquid Crystals

P. Kirsch,* W. Binder, A. Hahn, K. Jährling, M. Lenges, L. Lietzau, D. Maillard, V. Meyer, E. Poetsch, A. Ruhl, G. Unger, R. Fröhlich

Super-Fluorinated Liquid Crystals: Towards the Limits of Polarity

Eur. J. Org. Chem.
DOI: **10.1002/ejoc.200800149**



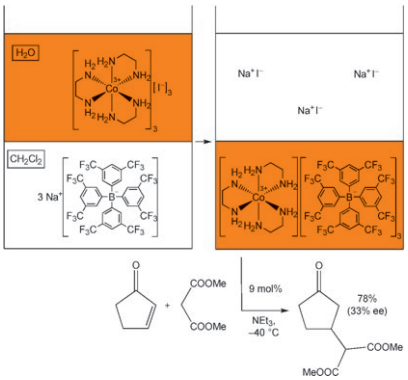
Highly fluorinated liquid crystals with unprecedented polarity were obtained by introducing a tetrahydropyran moiety into their mesogenic core structure. The new materials exhibit an unusually favourable[jy[ntcombination of mesophase properties, excellent solubility and low rotational viscosity, which renders them highly attractive for application in fast-switching active[jymatrix LCDs.

Enantioselective Catalysis

C. Ganzmann, J. A. Gladysz*

Phase Transfer of Enantiopure Werner Cations into Organic Solvents: An Overlooked Family of Chiral Hydrogen Bond Donors for Enantioselective Catalysis

Chem. Eur. J.
DOI: **10.1002/chem.200800226**



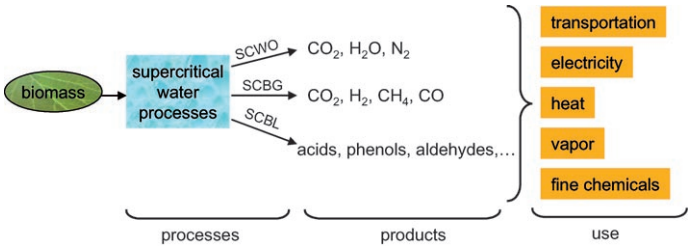
Werner complexes go organic! When orange aqueous solutions of [Co(1,2-diamine)$_3$]X_3 (X = I, Cl) are treated with CH_2Cl_2 solutions of $NaBAr_f$ (1:3 mol ratio), the aqueous phases decolorize (see scheme) and [Co(1,2-diamine)$_3$]-$(BAr_f)_3 \cdot nH_2O$ can be isolated from the CH_2Cl_2 phase (78–89%). The ethylenediamine complex can catalyze enantioselective Michael additions, presumably by an outer coordination sphere mechanism involving hydrogen bonding.

Supercritical Water

A. Loppinet-Serani,* C. Aymonier, F. Cansell

Current and Foreseeable Applications of Supercritical Water for Energy and the Environment

ChemSusChem
DOI: **10.1002/cssc.200700167**



Critical times, supercritical measures: The supercritical water oxidation (SCWO) process has been studied intensively during the past 15 years and proved efficient in decomposing organic matter. Armed with this know-how, supercritical water biomass valorization can now be developed for the production of gases and valuable chemicals (supercritical water biomass gasification (SCBG) or liquefaction (SCBL), respectively).