

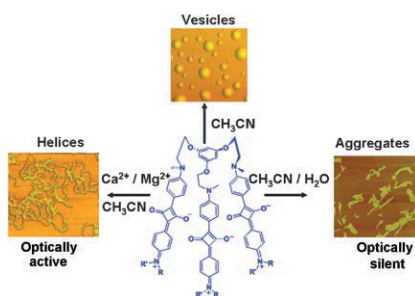
Organic Dyes

P. Chithra, R. Varghese, K. P. Divya,
A. Ajayaghosh*

**Solvent Induced Aggregation and
Cation Controlled Self-assembly of
Tripodal Squaraine Dyes: Optical,
Chiroptical and Morphological
Properties**

Chem. Asian J.

DOI: 10.1002/asia.200800133



Cation control: Squaraine dyes attached to an aromatic tripodal platform, resulted in different architectures such as vesicles, aggregates, and helical fibres in pure acetonitrile and acetonitrile–water solutions in the presence of Ca^{2+} or Mg^{2+} ions, respectively. Simple aggregates of a tripodal dye are optically inactive by circular dichroism, whereas cation bound self-assemblies are optically active.

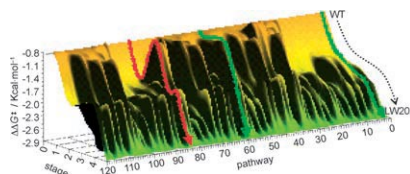
Directed Evolution

M. T. Reetz,* J. Sanchis

**Constructing and Analyzing the
Fitness Landscape of an Experimental
Evolutionary Process**

ChemBioChem

DOI: 10.1002/cbic.200800371



An inside view: Iterative saturation mutagenesis, which was used to enhance the enantioselectivity of an enzyme in five steps, has been illuminated by constructing the $5! = 120$ pathways leading from the wild-type to the final mutant. This type of analysis can be used to assess mutagenesis methods in directed evolution.

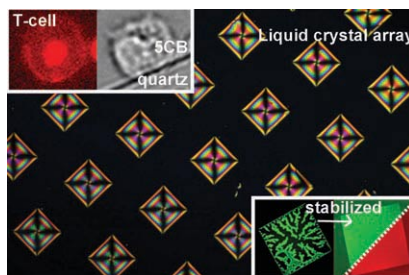
Surface Chemistry

A. R. Wise, J. A. Nye, J. T. Groves*

**Discrete Arrays of Liquid-Crystal-
Supported Proteolipid Monolayers
as Phantom Cell Surfaces**

ChemPhysChem

DOI: 10.1002/cphc.200800257



Perfect support: Microfabrication techniques to create arrays of identical liquid-crystalline areas for membrane support and protein display are demonstrated. A new method using a network of small proteins is employed to stabilize the liquid–liquid interface and make it biofunctional. The obtained surface is then used as a support for an immunological T cell synapse (see figure).

Nanoparticles

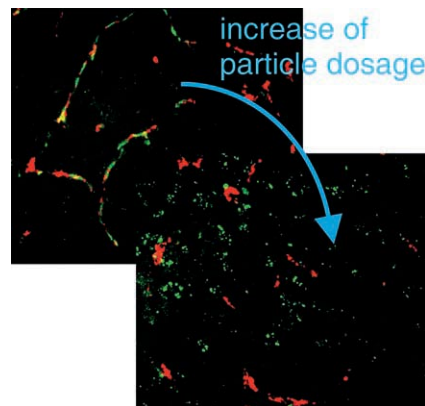
C. K. Weiss,* M.-V. Kohnle,
K. Landfester, T. Hauk, D. Fischer,
J. Schmitz-Wienke, V. Mailänder

**The First Step into the Brain: Uptake
of NIO-PBCA Nanoparticles by
Endothelial Cells in vitro and in vivo,
and Direct Evidence for their
Blood–Brain Barrier Permeation**

ChemMedChem

DOI: 10.1002/cmdc.200800130

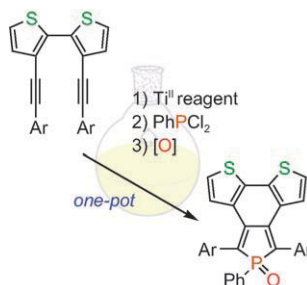
Enter the brain. Fluorescent polysorbate 80 coated PBCA nanoparticles, prepared in miniemulsion, were investigated for their capacity to permeate blood–tissue barriers in vivo and in vitro. Direct evidence for a concentration-dependent permeation of the blood–brain barrier as well as the blood–retina barrier was obtained.



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Fused-Ring Systems

New P,S-hybrids: The design, preparation (see scheme), and characterization of three types of bithiophene-fused benzo[c]phospholes are described. The structural, optical, and electrochemical properties of these compounds vary considerably depending on the π -conjugation modes at the bithiophene subunits and the substituents of the hetero-ole components.

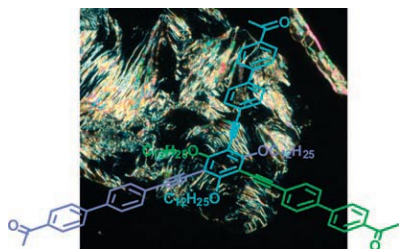


Y. Matano,* T. Miyajima,
T. Fukushima, H. Kaji, Y. Kimura,
H. Imahori

Comparative Study on the Structural, Optical, and Electrochemical Properties of Bithiophene-Fused Benzo[c]phospholes

Chem. Eur. J.
DOI: 10.1002/chem.200801017

Disc-Rod Mesogens



Biphenylacetylene-based mesogens are prepared by Sonogashira coupling and their mesomorphic properties are related to the structural (linear vs. trigonal) and electronic features of the target compounds. While the C_3 -symmetric tris(alkynyl) compound is non-mesogenic, the linear biphenylacetylene forms a smectic liquid-crystal phase.

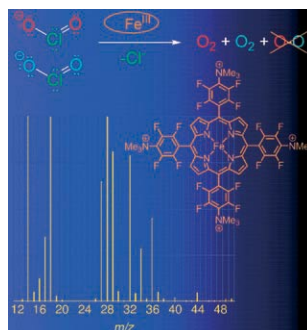
G. Hennrich,* P. D. Ortiz, E. Cavero,
R. E. Hanes, J. L. Serrano

Biphenyl-Based Disc- vs. Rod-Shaped Phenylacetylenes: Mesomorphism and Electronic Properties

Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200800568

Bioinorganic Chemistry

Cleaning up chlorite: A water-soluble iron porphyrin catalyzes the dismutation of chlorite to dioxygen and chloride. Labeling experiments demonstrate a novel mechanism for O=O bond formation. These mechanistic insights should aid in the design of catalysts for remediation of oxychlorine contaminants.



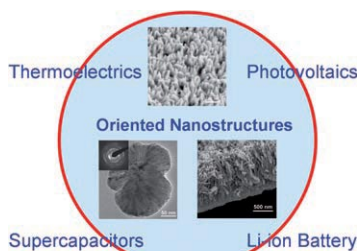
M. J. Zdilla, A. Q. Lee,
M. M. Abu-Omar*

Bioinspired Dismutation of Chlorite to Dioxygen and Chloride Catalyzed by a Water-Soluble Iron Porphyrin

Angew. Chem. Int. Ed.
DOI: 10.1002/anie.200801521

Nanostructures

So small, but so much potential: Oriented nanostructures show promising properties for energy-storage and -conversion applications such as photovoltaics and thermo-/electrochemical energy storage, owing to their high surface areas, optimum dimensions and architecture, controlled pore channels, and alignment of their nanocrystalline phases.



J. Liu,* G. Cao,* Z. Yang,* D. Wang,
D. Dubois, X. Zhou, G. L. Graff,
L. R. Pederson, J.-G. Zhang

Oriented Nanostructures for Energy Conversion and Storage

ChemSusChem
DOI: 10.1002/cssc.200800087



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