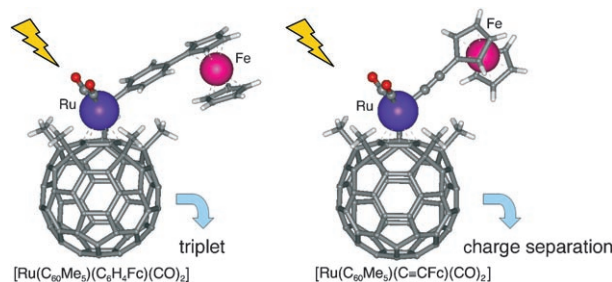


Fullerenes

Y. Matsuo,* K. Matsuo, T. Nanao,
R. Marczak, S. S. Gayathri,
D. M. Guldj,* E. Nakamura*

A Ruthenium Bridge in
Fullerene–Ferrocene Arrays: Synthesis of
[Ru(C₆₀Me₅)R(CO)₂] (R = C₆H₄Fc,
C≡CFc) and Their Charge-Transfer
Properties

Chem. Asian J.
DOI: 10.1002/asia.200700379



Making the connection: The new phenyl-ene- and acetylene-bridged ferrocene–ruthenium–fullerene arrays shown convert into different states upon photoirradiation in toluene. The organometallic

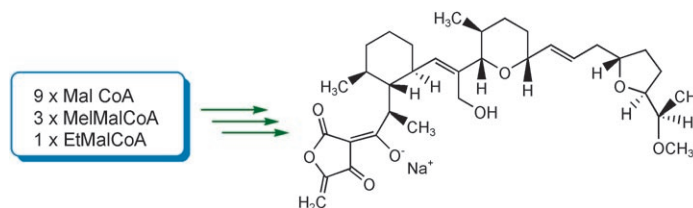
connection thus provides a convenient and efficient way to control the physical behavior of donor/acceptor molecules. Fc = ferrocenyl.

Biosynthesis

Y. Demydchuk, Y. Sun, H. Hong,
J. Staunton, J. B. Spencer, P. F. Leadlay*

Analysis of the Tetronomycin Gene
Cluster: Insights into the Biosynthesis of
a Polyether Tetronate Antibiotic

ChemBioChem
DOI: 10.1002/cbic.200700715



Molecular origami. Analysis of the biosynthetic gene cluster for the polyether tetronate antibiotic, tetronomycin, and the results of specific gene disruption have led to a detailed proposal for the multistep process in which a modular

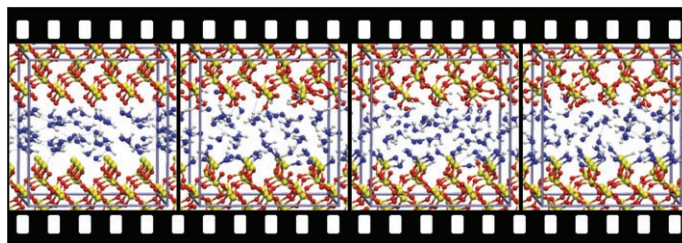
polyketide synthase produces a C-26 polyketide chain, which is then folded and cyclised with complete stereochemical fidelity to create the metal-binding cavity of the ionophore (see illustration).

Molecular Dynamics

W. A. Adeagbo, N. L. Doltsinis,*
K. Klevakina, J. Renner

Transport Processes at α -Quartz–Water
Interfaces: Insights from First-Principles
Molecular Dynamics Simulations

ChemPhysChem
DOI: 10.1002/cphc.200700819



Hydroxylation of quartz surfaces: Car–Parrinello MD simulations, performed at high temperature and pressure, investigate processes at the α -quartz–water interface (see snapshot series). The

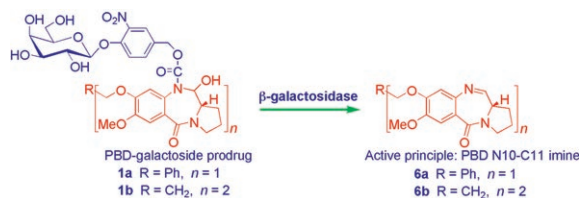
model system initially has O-terminated and Si-terminated surfaces sandwiching a film of liquid water. Eventually, both surfaces are fully hydroxylated and no further chemical reactions are observed.

Antitumor Prodrugs

A. Kamal,* V. Tekumalla, A. Krishnan,
M. Pal-Bhadra, U. Bhadra*

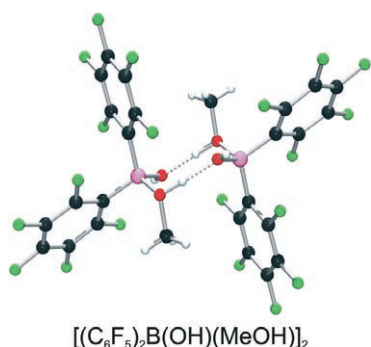
Development of Pyrrolo[2,1-c][1,4]-
benzodiazepine β -Galactoside Prodrugs
for Selective Therapy of Cancer by
ADEPT and PMT

ChemMedChem
DOI: 10.1002/cmdc.200700328



Selective and effective: Two PBD-galactoside prodrugs **1 a–b** have been synthesized and evaluated for use in selective therapy of cancer by ADEPT and PMT

protocols. The two prodrugs display anti-tumor activity closely resembling their parent moieties, when activated by the enzyme β -galactosidase.



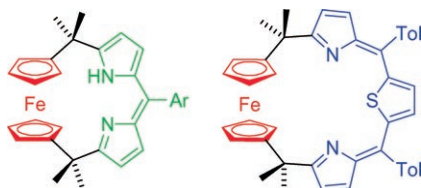
The complementary Lewis acid–base and hydrogen-bond donor/acceptor properties of $(\text{C}_6\text{F}_5)_2\text{BOH}$ and MeOH give rise to a number of interlaced association equilibria. In particular, hydrogen-bond pairing of the covalent adduct affords a dimer, the key intermediate in the esterification reaction, in fast equilibrium with the acid and ester through intramolecular proton transfer, as revealed by low-temperature NMR spectroscopy.

Perfluoroborinic Acid

D. Donghi, D. Maggioni, T. Beringhelli, G. D'Alfonso,* P. Mercandelli,* A. Sironi

Hydrogen Bonding and Lewis Acid–Base Interactions in the System Bis(pentafluorophenyl)borinic Acid / Methanol

Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.200701210



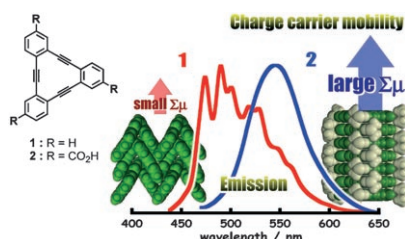
Ferrocene acts as a versatile building block for the construction of porphyrinoids, providing access to macrocyclic structures of various shapes and sizes. The two representative systems, shown in the figure, adopt helical conformations that undergo dynamic inversion in solution.

Porphyrin Analogues

M. Stępień, I. Simkova, L. Latos-Grażyński*

Helical Porphyrinoids: Incorporation of Ferrocene Subunits into Macrocyclic Structures

Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200800146



Face up to it: The face-to-face stacked 1D column composed of [12]DBA macrocycle was successfully achieved by using the carboxylic derivative **2** in a crystalline state. Compared with the herringbone assembly of the parent compound **1**, the crystal of **2** exhibits superstructure-dependent properties: a red-shifted, broadened, weakened fluorescence profile and significantly anisotropic charge mobility along the columnar axis.

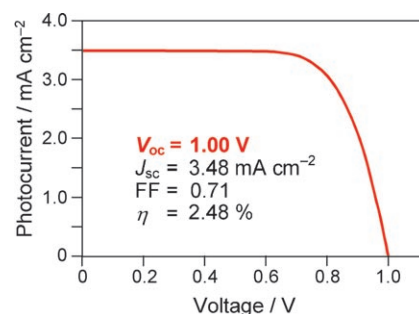
Dehydroannulenes

I. Hisaki,* Y. Sakamoto, H. Shigemitsu, N. Tohnai, M. Miyata,* S. Seki, A. Saeki, S. Tagawa

Superstructure-Dependent Optical and Electrical Properties of an Unusual Face-to-Face, π -Stacked, One-Dimensional Assembly of Dehydrobenzo[12]annulene in the Crystalline State

Chem. Eur. J.
DOI: 10.1002/chem.200800228

The big 1.0: A dye-sensitized solar cell that combines Mg-containing TiO_2 electrodes and an organic photosensitizer 2-cyano-3-(4-*N,N*-diphenylaminophenyl)-*trans*-acrylic acid displays the highest open-circuit voltage reported so far ($V_{oc} = 1.00$ V). The electrodes have a negatively shifted conduction band, and the photosensitizer has a sufficiently negative LUMO energy level to inject the photoexcited electrons into the electrode efficiently.



Dye-Sensitized Solar Cells

S. Iwamoto,* Y. Sazanami, M. Inoue, T. Inoue, T. Hoshi, K. Shigaki, M. Kaneko, A. Maenosono

Fabrication of Dye-Sensitized Solar Cells with an Open-Circuit Photovoltage of 1 V

ChemSusChem
DOI: 10.1002/cssc.200700163