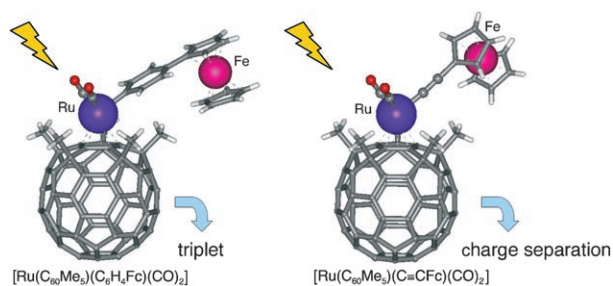


## Fullerenes

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

### A Ruthenium Bridge in Fullerene–Ferrocene Arrays: Synthesis of $[\text{Ru}(\text{C}_{60}\text{Me}_5)\text{R}(\text{CO})_2]$ ( $\text{R} = \text{C}_6\text{H}_4\text{Fc}$ , $\text{C} \equiv \text{CFc}$ ) and Their Charge-Transfer Properties

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



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

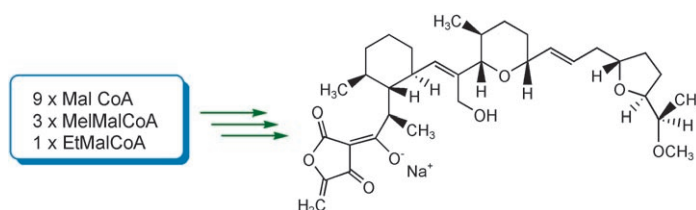
connection thus provides a convenient and efficient way to control the physical behavior of donor/acceptor molecules. Fc = ferrocenyl.

## 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

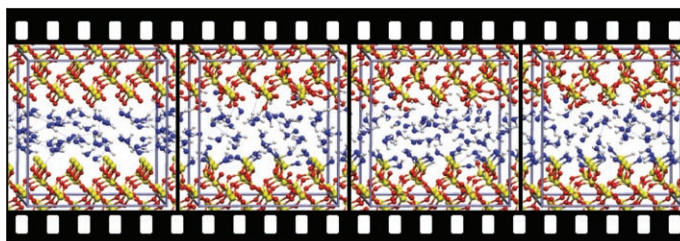
polyketide synthase produces a C-26 polyketide chain, which is then folded and cyclised with complete stereochemical fidelity to create the metal-binding cavity of the ionophore (see illustration).

## Molecular Dynamics

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

### Transport Processes at $\alpha$ -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  $\alpha$ -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.

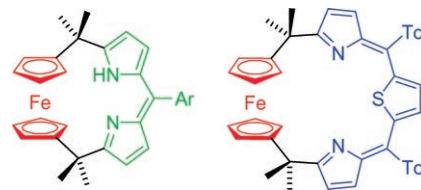
## Porphyrin Analogues

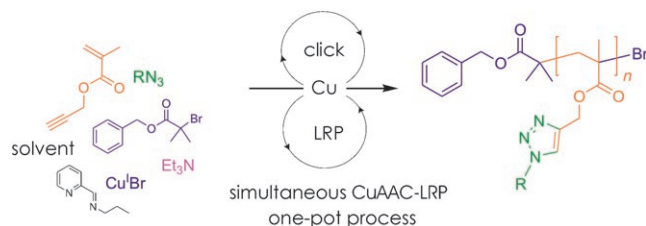
M. Stępień, I. Simkova,  
L. Latos-Graz|yński\*

### Helical Porphyrinoids: Incorporation of Ferrocene Subunits into Macrocyclic Structures

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

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





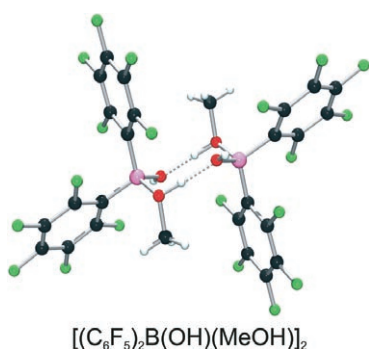
**All in one:** Cu<sup>I</sup>Br/iminopyridine systems can catalyze simultaneously both copper(I)-catalyzed azide-alkyne cycloaddition (CuAAC, “click”) and living radical polymerization (LRP) processes (see scheme). The relative rate of the two

processes can be tailored by a judicious choice of the reaction conditions (solvent, temperature, [Cu<sup>I</sup>Br]<sub>0</sub>) leading to the development of a potentially very efficient synthetic route to well-defined functional polymers.

J. Geng, J. Lindqvist, G. Mantovani,\*  
D. M. Haddleton\*

### Simultaneous Copper(I)-Catalyzed Azide-Alkyne Cycloaddition (CuAAC) and Living Radical Polymerization

*Angew. Chem. Int. Ed.*  
DOI: 10.1002/anie.200800179

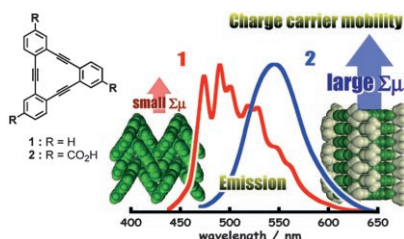


The complementary Lewis acid-base and hydrogen-bond donor/acceptor properties of (C<sub>6</sub>F<sub>5</sub>)<sub>2</sub>BOH and MeOH give rise to a number of interlaced association equilibria. In particular, hydrogen-bond pairing of the covalent adduct affords a dimer, the key intermediate in the esterification reaction, in fast equilibrium with the acid and ester through intramolecular proton transfer, as revealed by low-temperature NMR spectroscopy.

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)boronic Acid/Methanol

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



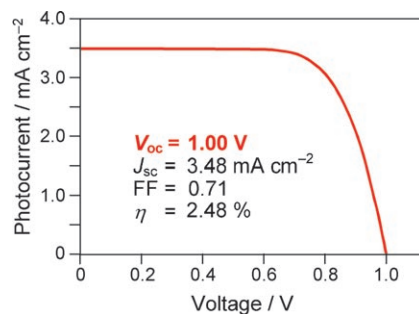
**Face up to it:** The face-to-face stacked 1D column composed of [12]DBA macrocycle was successfully achieved by using the carboxylic derivative **2** in a crystalline state. Compared with the herringbone assembly of the parent compound **1**, the crystal of **2** exhibits superstructure-dependent properties: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

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, $\pi$ -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<sub>2</sub> 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.



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