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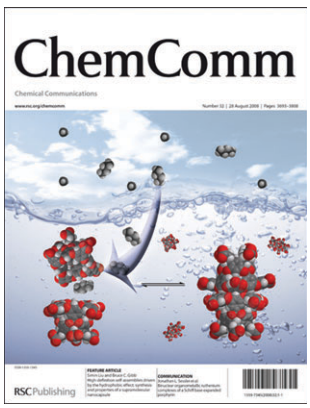
ISSN 1359–7345 CODEN CHCOFS (32) 3693–3808 (2008)

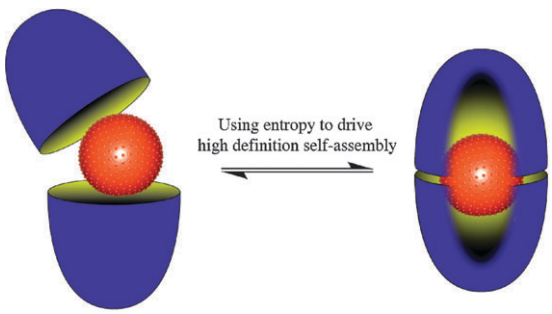



**Cover**
See Simin Liu and Bruce C. Gibb, pp. 3709–3716. An aqueous solution that sequesters and separates hydrocarbon gases is one possibility when deep-cavity cavitands harness the hydrophobic effect.
Image reproduced by permission of Simin Liu and Bruce C. Gibb from *Chem. Commun.*, 2008, 3709.


**Inside cover**
See Edwin C. Constable *et al.*, pp. 3717–3719. New solar cells using copper rather than ruthenium offer a hope of a cheaper future technology.
Image reproduced by permission of Takeru Bessho, Edwin C. Constable, Michael Graetzel, Ana Hernandez Redondo, Catherine E. Housecroft, William Kylberg, Md. K. Nazeeruddin, Markus Neuburger and Silvia Schaffner from *Chem. Commun.*, 2008, 3717.

## FEATURE ARTICLE



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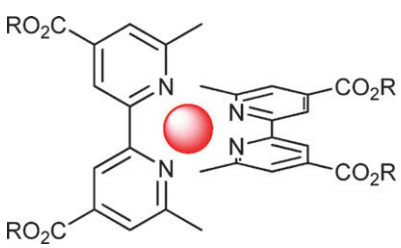

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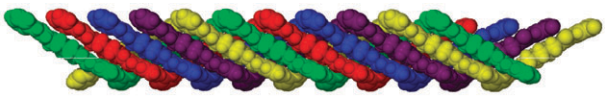



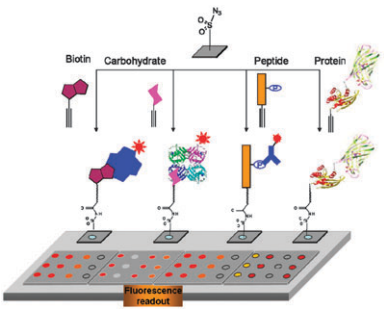




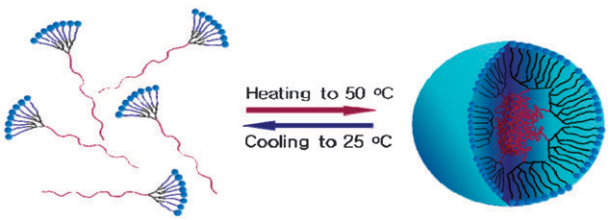




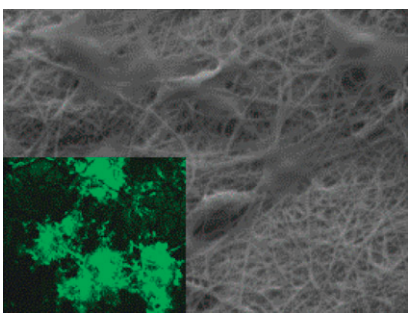

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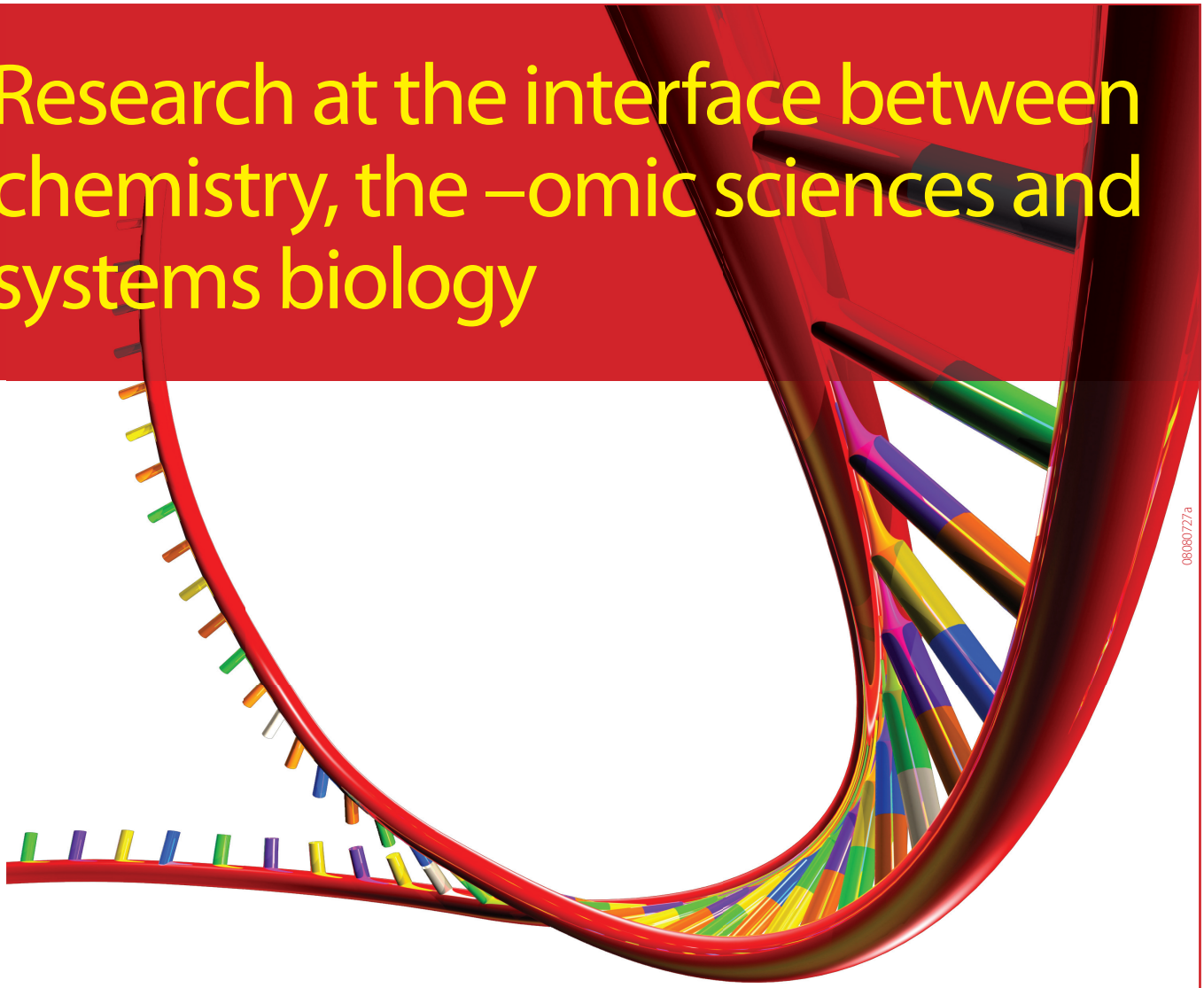




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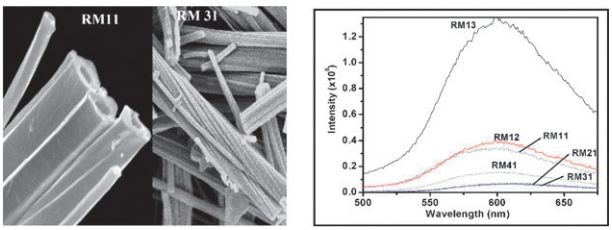




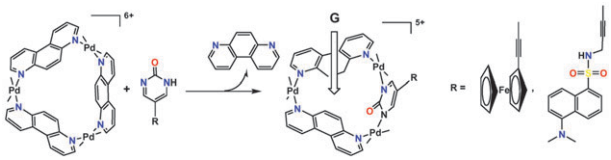




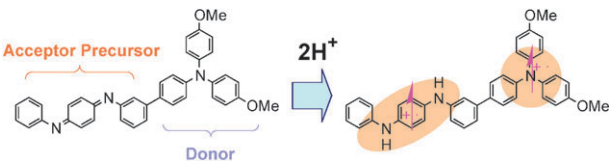




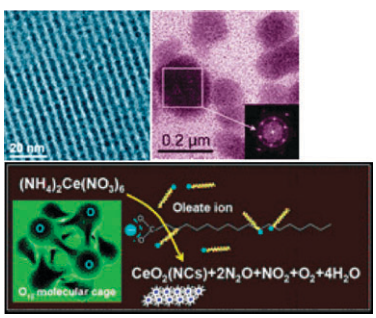

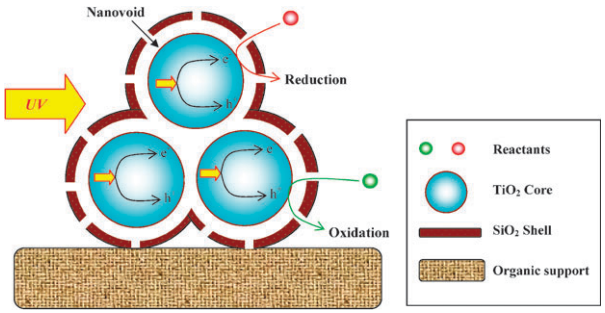




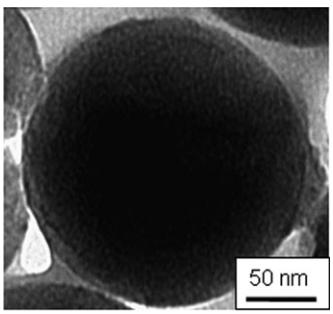




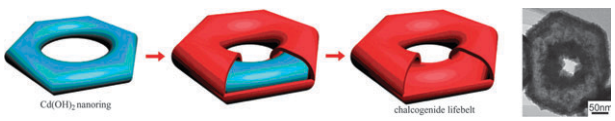




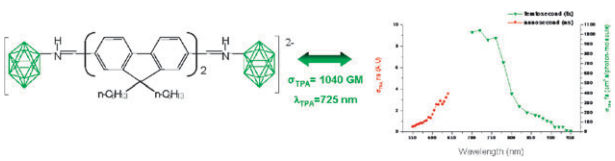

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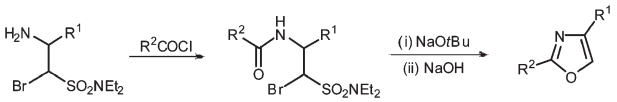




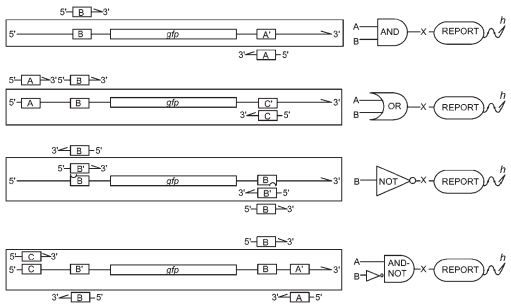




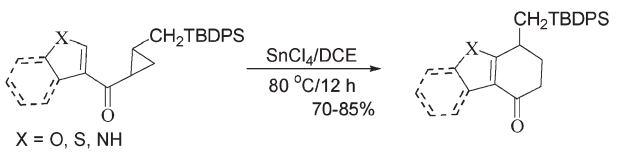




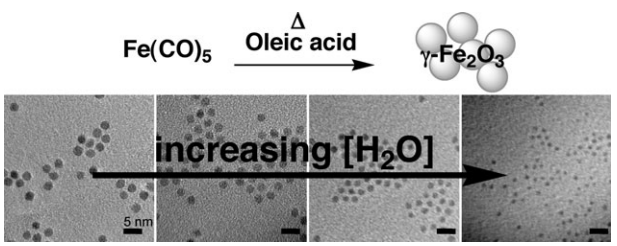

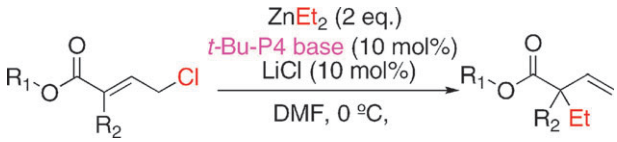




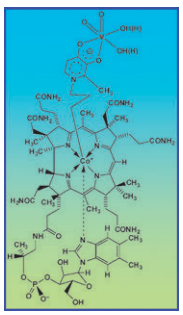



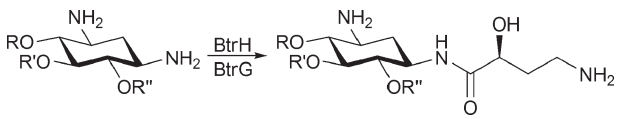




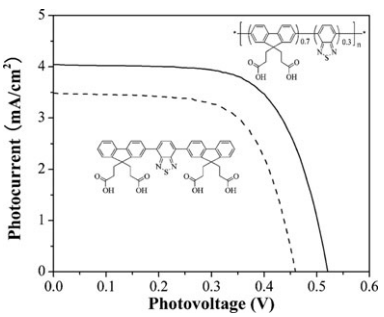

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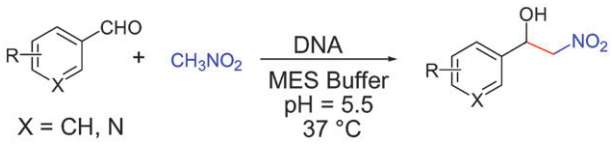
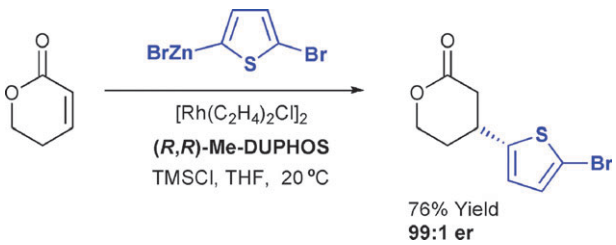



### Investigation of DNA as a catalyst for Henry reaction in water

Jinmin Fan, Gaojun Sun, Changfeng Wan, Zhiyong Wang* and Yingfu Li*

Double-stranded DNA available from a variety of natural sources (including bacteria and plants) can be used as a catalyst to facilitate the Henry reaction in aqueous solution under mild reaction conditions.

3795

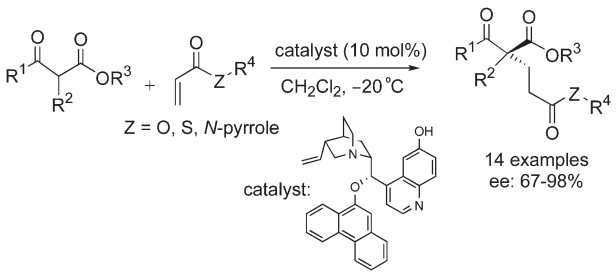



### Enantioselective rhodium-catalysed 1,4-additions of 2-heteroarylzinc donors using Me-DUPHOS

Jérôme Le Nôtre, Joseph C. Allen and Christopher G. Frost*

A complex derived from $[Rh(C_2H_4)_2Cl]_2$ and (*R*,*R*)-Me-DUPHOS is an efficient and highly enantioselective catalyst for the conjugate addition of 2-heteroarylzinc reagents (up to 99 : 1 er).

3798

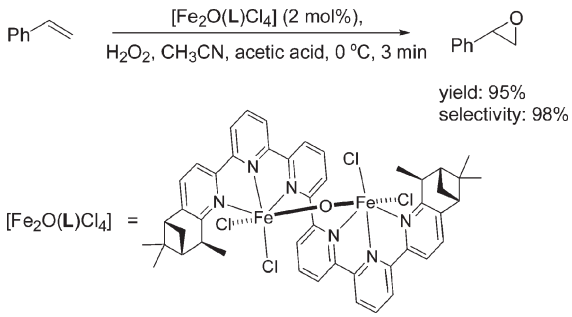



### Enantioselective organocatalytic Michael additions to acrylic acid derivatives: generation of all-carbon quaternary stereocentres

Caroline L. Rigby and Darren J. Dixon*

Acrylic esters, thioesters and *N*-acryloyl pyrrole have been identified as effective Michael acceptors in the reaction with β-keto ester pro-nucleophiles catalysed by a cinchona alkaloid derived bifunctional organocatalyst. Enantiomeric excesses of up to 98% and yields of up to 96% can be obtained for a range of Michael acceptors and pro-nucleophiles.

3801




### A chiral iron-sexipyridine complex as a catalyst for alkene epoxidation with hydrogen peroxide

Ho-Lun Yeung, Kiu-Chor Sham, Chui-Shan Tsang, Tai-Chu Lau and Hoi-Lun Kwong*

A chiral iron-sexipyridine complex–hydrogen peroxide mixture is a highly efficient catalytic system for styrene epoxidation with excellent reactivity and chemoselectivity.

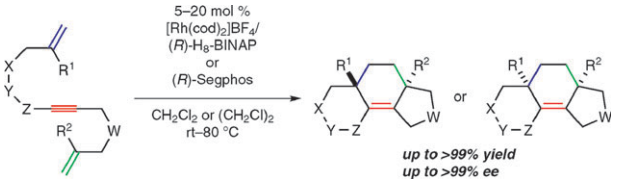
 

3804

**Rhodium-catalyzed enantio- and diastereoselective intramolecular [2 + 2 + 2] cycloaddition of unsymmetrical dienynes**

Hiromi Sagae, Keiichi Noguchi, Masao Hirano and Ken Tanaka*

A cationic rhodium(I)/(*R*)-$H_8$-BINAP or (*R*)-Segphos complex catalyzes an intramolecular [2 + 2 + 2] cycloaddition of unsymmetrical dienynes, leading to fused tri- and tetracyclic cyclohexenes bearing two tertiary or quaternary carbon centers in high yields with high enantio- and diastereoselectivity.



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