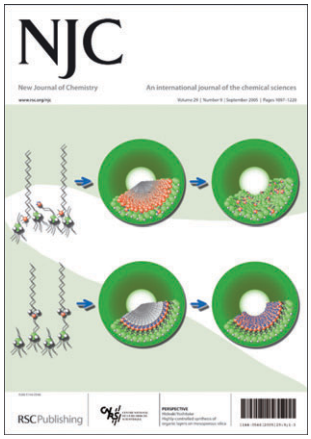
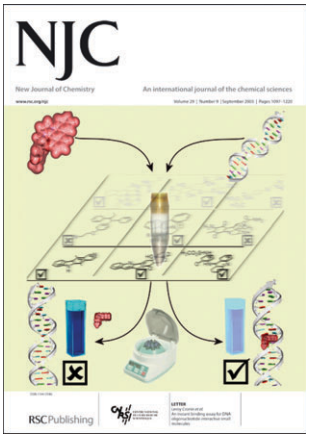
## IN THIS ISSUE

ISSN 1144–0546 CODEN NJCHES 29(9) 1097–1220 (2005)




**Cover**
See Hideaki Yoshitake, page 1107.
The front cover picture illustrates that when functionalization is associated with templating, aminopropyl groups are dispersed more uniformly on a mesoporous silica surface than those prepared by a co-condensation method where some amino groups are inactivated, probably by binding strongly with the surface or by being buried in the silica framework.
Image reproduced by permission of Hideaki Yoshitake from *New J. Chem.*, 2005, **29**, 1107.




**Inside Cover**
See Leroy Cronin *et al.*, page 1118.
The inside front cover depicts a YES/NO DNA binding assay for small molecules using size exclusion filtration and UV vis spectroscopy. This means that it is extremely simple to gain information about the DNA-interactive nature of a library of molecules and it is easy, using this methodology, to examine many compounds very quickly.
Image reproduced by permission of Louise V. Smith, Jesus M. de la Fuente, Kevin M. Guthrie, Alexis D. C. Parenty and Leroy Cronin from *New J. Chem.*, 2005, **29**, 1118.



## CHEMICAL SCIENCE

### C65

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**Chemical Science**
**September 2005/Volume 2/Issue 9**
www.rsc.org/chemicalscience

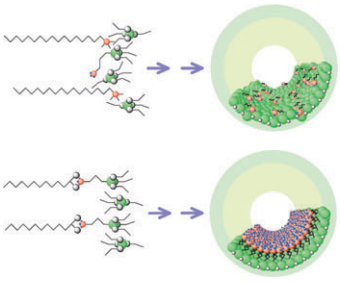
## PERSPECTIVE

### 1107

**Highly-controlled synthesis of organic layers on mesoporous silica: their structure and application to toxic ion adsorptions**

Hideaki Yoshitake*

We reveal potential problems in the synthesis of modified mesoporous silica for achieving a uniform structure, developing new synthetic routes to highly-functionalized solids and elucidating the mechanism where they work as an adsorbent, which are discussed both on the mesoscopic and microscopic scales.



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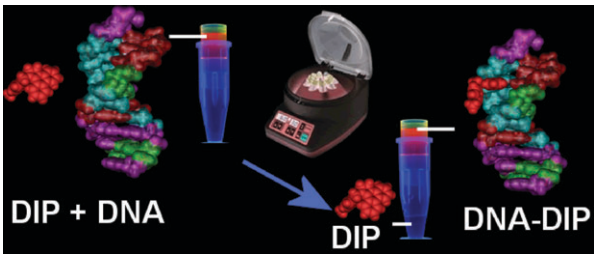
## LETTERS

### 1118

**Does it bind? An instant binding assay for DNA oligonucleotide interactive small molecules**

Louise V. Smith, Jesus M. de la Fuente, Kevin M. Guthrie, Alexis D. C. Parenty and Leroy Cronin*

Ultrafiltration analysis has been used to screen DNA oligonucleotide interactive small molecules for the first time, providing a straightfoward yes/no asnwer to small molecule DNA binding, and this was used to discover a new class of binders based on dihydro-imidazo-phenanthridinium.

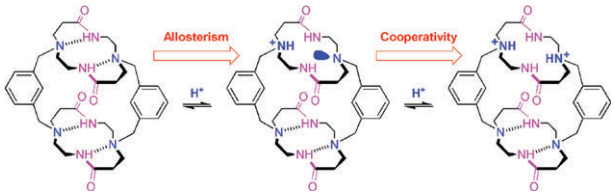



### 1121

**Synthesis, characterization and X-ray crystal structures of cyclam derivatives. 7. Hydrogen-bond induced allosteric effects and protonation cooperativity in a macrotricyclic bisdioxocyclam receptor**

Michel Meyer, Laurent Frémond, Enrique Espinosa, Stéphane Brandès, Guy Yves Vollmer and Roger Guilard*

The unprecedented cooperative protonation of a barrel-shaped macrotricyclic tetraamine is rationalized in terms of allosteric effects triggered by the disruption of intramolecular hydrogen bonds upon binding of the first and third protons.

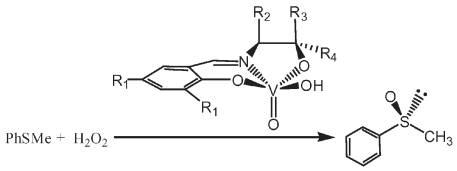



### 1125

**Substituent effects and mechanism elucidation of enantioselective sulfoxidation catalyzed by vanadium Schiff base complexes**

Qingle Zeng,* Heqing Wang, Wen Weng, Wenshi Lin, Yuxing Gao, Xiantong Huang and Yufen Zhao*

The substituent effects of vanadium-catalyzed enantioselective sulfoxidation were first systematically studied. A rational mechanism of enantioselective sulfoxidation is proposed.



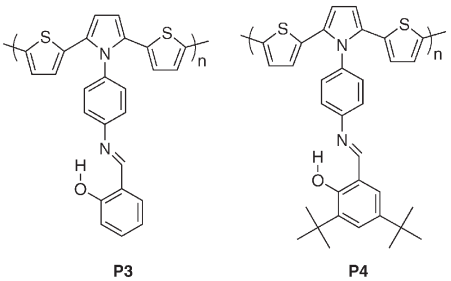

## PAPERS

### 1128

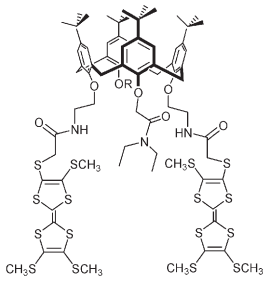
**Electrochromic conjugated *N*-salicylidene-aniline (anil) functionalized pyrrole and 2,5-dithienylpyrrole-based polymers**

Barry C. Thompson, Khalil A. Abboud, John R. Reynolds,* Keitaro Nakatani and Pierre Audebert*

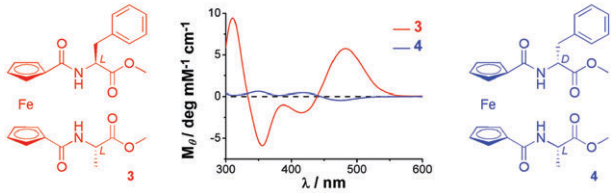
The electrochromic and photochromic response of anil functionalized pyrrole and bis-thiophene–pyrrole monomers and polymers represents a route to a new class of multifunctional materials.



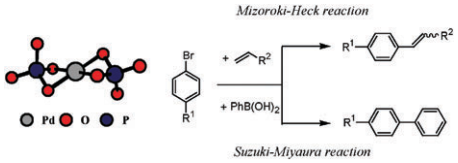
 



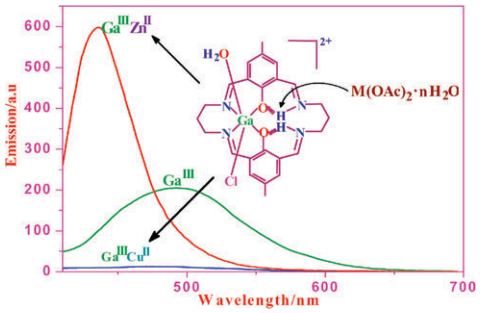




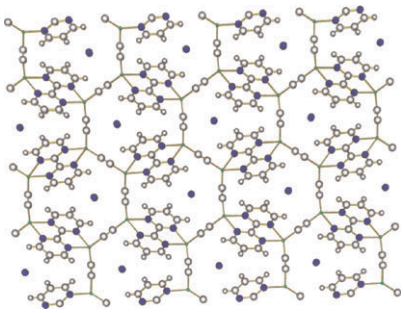






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