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## IN THIS ISSUE

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See Fernando Benito-Lopez, Dermot Diamond *et al.*, pp. 924–926.
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**Inside cover**
See Stephan Schulz *et al.*, pp. 927–929.
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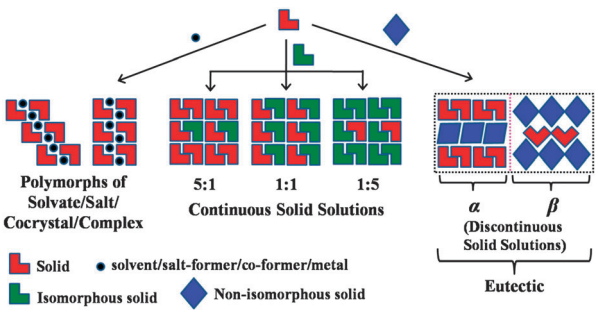
## FEATURE ARTICLE



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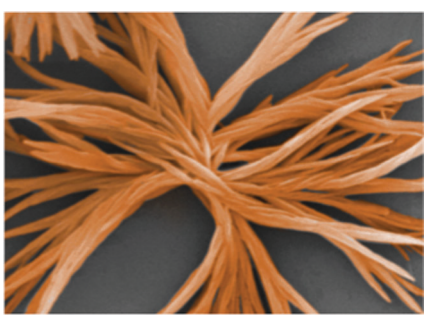

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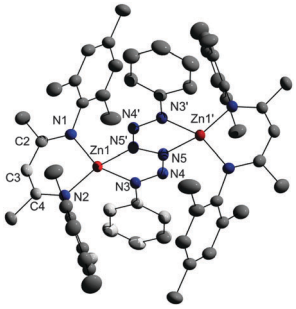




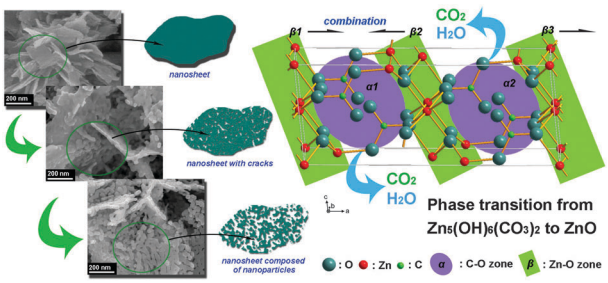




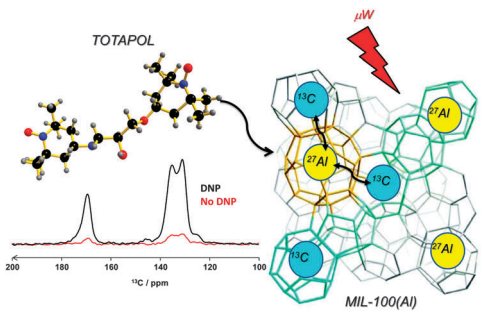




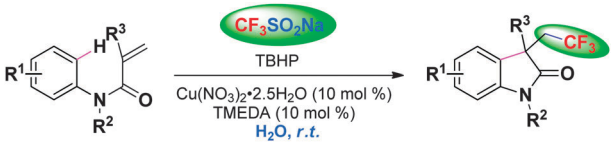

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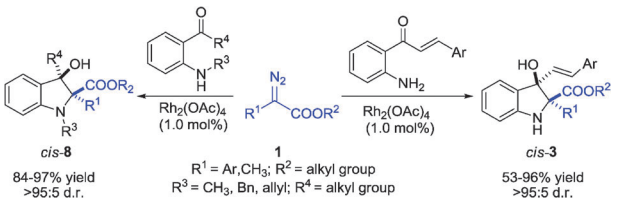




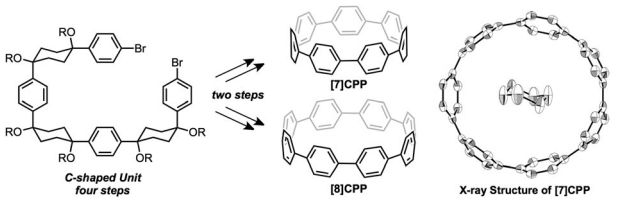




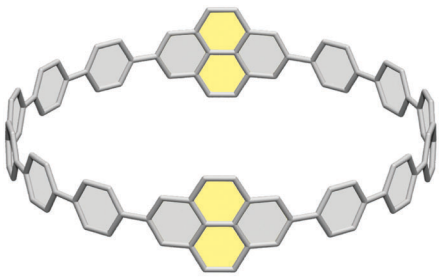




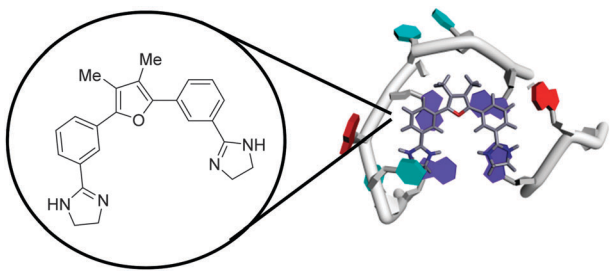

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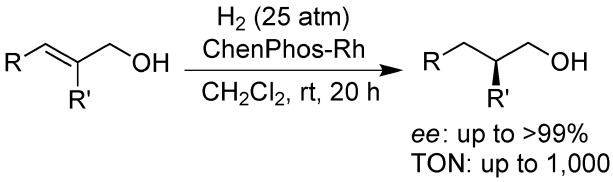




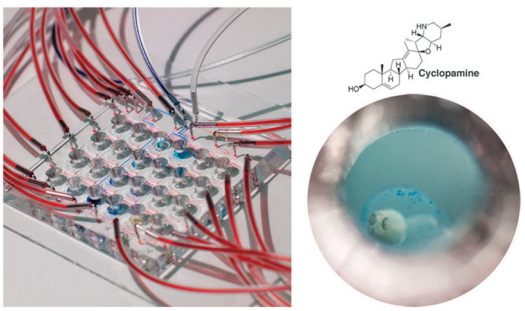




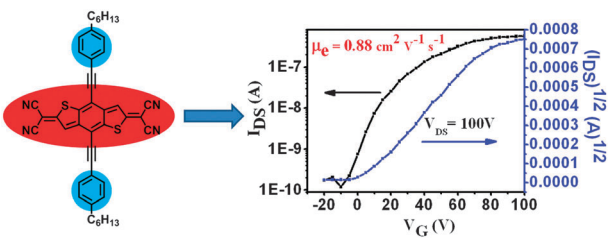




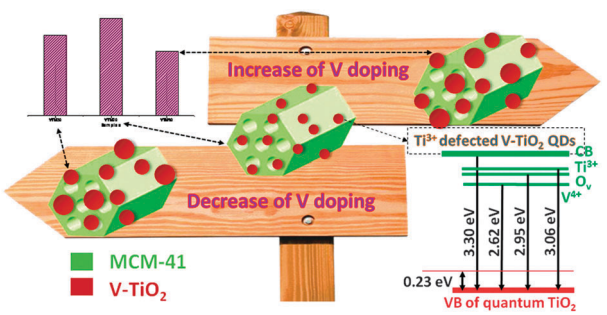

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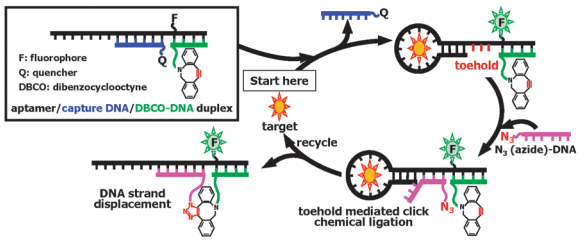


### Enzyme-free fluorescent-amplified aptasensors based on target-responsive DNA strand displacement *via* toehold-mediated click chemical ligation

Motoi Oishi,* Shingo Nakao and Daiki Kato

A new target-responsive DNA strand displacement system *via* toehold-mediated click chemical ligation was designed and prepared for enzyme-free fluorescent-amplified aptasensors.

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### Magnesium(II)-catalyzed asymmetric hetero-Diels–Alder reaction of Brassard's dienes with isatins

Jianfeng Zheng, Lili Lin, Yulong Kuang, Jiannan Zhao, Xiaohua Liu and Xiaoming Feng*

The first catalytic asymmetric hetero-Diels–Alder reaction of Brassard's dienes with isatins was realized using Mg(II)/*N*,*N*′-dioxide complexes as catalysts, affording the corresponding chiral spirolactones bearing tetrasubstituted centers in up to 99% yield with up to 99% ee and >99 : 1 dr within 3 hours.

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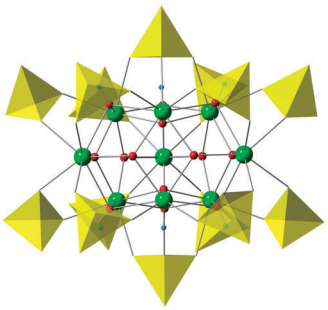

### A novel nonanuclear hafnium oxide–hydroxide–sulphate cluster crystallised from aqueous solution

A. Kalaji and L. Soderholm*

Single crystals of $(NH_4)_{14}[Hf_9O_8(OH)_6(SO_4)_{14}]\cdot nH_2O$ (**1**) were obtained by heating a sealed aqueous solution of $HfOCl_2\cdot 8H_2O$, $(NH_4)_2SO_4$ and $H_2SO_4$ at 80 °C for 10 days. The discrete $[Hf_9O_8(OH)_6(SO_4)_{14}]^{14-}$ anionic clusters have no inter-cluster connectivity. This rare nonameric architecture has only been observed previously in two $Bi^{3+}$ oxo clusters.

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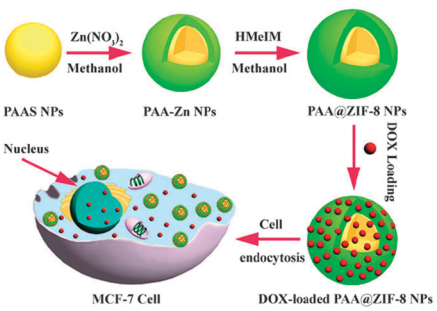


### Polyacrylic acid@zeolitic imidazolate framework-8 nanoparticles with ultrahigh drug loading capability for pH-sensitive drug release

Hong Ren, Lingyu Zhang, Jiping An, Tingting Wang,* Lu Li, Xiaoyan Si, Liu He, Xiaotong Wu, Chungang Wang* and Zhongmin Su*

A facile route was developed to fabricate the polyacrylic acid@ZIF-8 nanoparticles (NPs), possessing ultrahigh doxorubicin loading capability (1.9 g DOX $g^{-1}$ NPs), which were employed as pH-dependent drug delivery vehicles.

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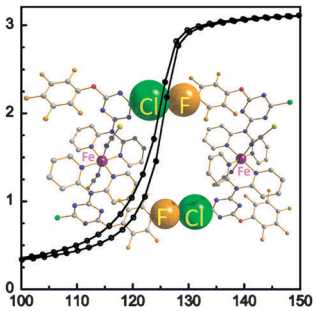




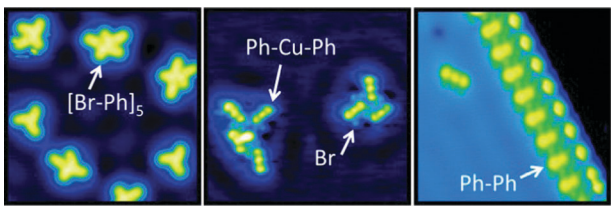




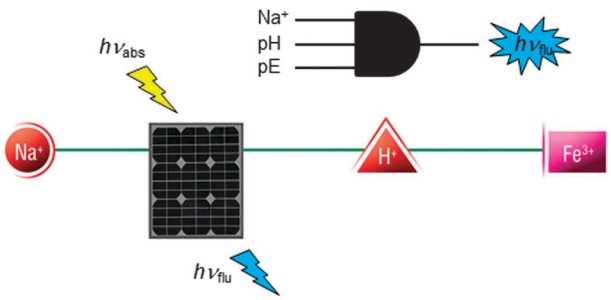




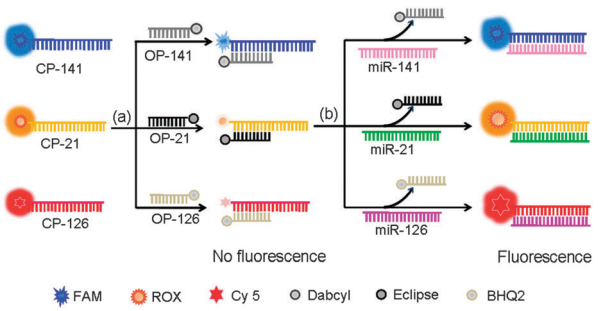

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## Highly specific enrichment of *N*-linked glycopeptides based on hydrazide functionalized soluble nanopolymers

Lijuan Zhang, Hucong Jiang, Jun Yao, Yali Wang, Caiyun Fang, Pengyuan Yang and Haojie Lu*

Hydrazide functionalized PAMAM was synthesized for selective enrichment of *N*-linked glycopeptides from biological samples using FASP (filter-aided sample preparation) mode.