

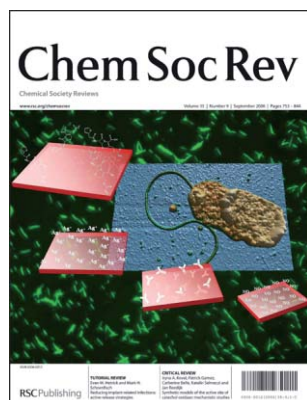
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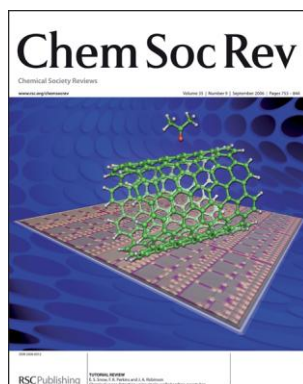
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ISSN 0306-0012 CODEN CSRVR 35(9) 753–844 (2006)



### Cover

See Evan M. Hetrick and Mark H. Schoenfisch, page 780. Bacterial adhesion and active release strategies to combat implant-related infections. Image reproduced by permission of Evan M. Hetrick and Mark H. Schoenfisch, *Chem. Soc. Rev.*, 2006, 35, 780.



### Inside cover

See E. S. Snow, F. K. Perkins and J. A. Robinson, page 790. An expanded view (covering 7 orders of magnitude in scale) of a wafer of chemical sensors that use networks of carbon nanotubes as the active sensor material. Image reproduced by permission of E. S. Snow, F. K. Perkins and J. A. Robinson, *Chem. Soc. Rev.*, 2006, 35, 790.

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September 2006/Volume 3/Issue 9

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### Inferring the chemical mechanism from structures of enzymes

James H. Naismith

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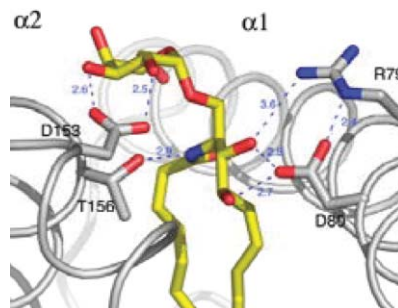
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**Glycolipids for natural killer T cells**

Paul B. Savage,\* Luc Teyton and Albert Bendelac

Carbohydrate and lipid recognition combine to select for specific glycolipids that stimulate strong immune responses from natural killer T cells.

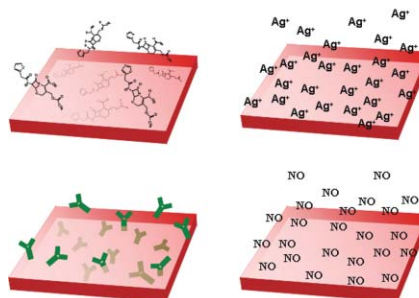


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**Reducing implant-related infections: active release strategies**

Evan M. Hetrick and Mark H. Schoenfisch\*

Polymeric coatings that actively release antibacterial mediators have been designed to reduce implant-associated infection. Current active release strategies include the use of antibiotics, silver ion, antibodies, and nitric oxide.

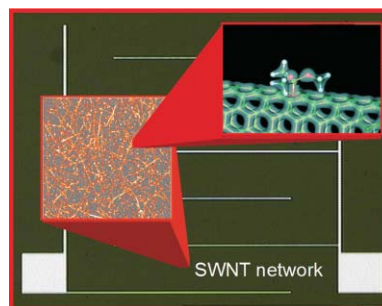


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**Chemical vapor detection using single-walled carbon nanotubes**

E. S. Snow, F. K. Perkins and J. A. Robinson

Transitioning carbon nanotubes from laboratory curiosity to chemical sensor applications.

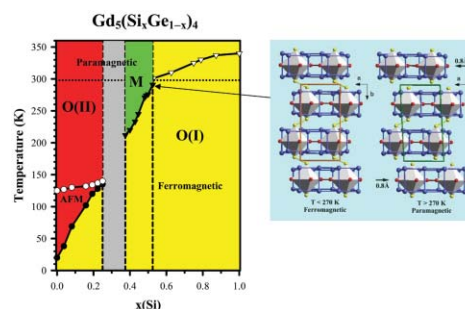


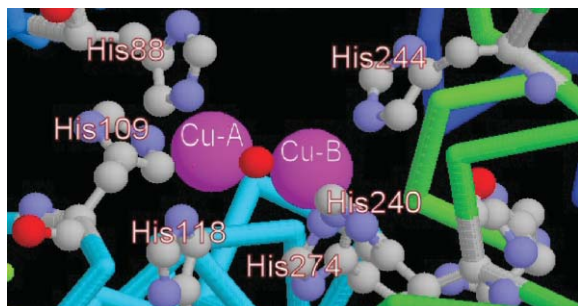
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Gordon J. Miller

Near-room temperature magnetic refrigeration can become viable through fundamental chemical and physical investigations of the rare-earth series,  $RE_5(Si_xGe_{1-x})_4$ .





### Synthetic models of the active site of catechol oxidase: mechanistic studies

Iryna A. Koval, Patrick Gamez, Catherine Belle, Katalin Selmeczi and Jan Reedijk\*

Catechol oxidase is a type-3 copper enzyme responsible for the production of melanin, a dark pigment thought to protect a damaged tissue from pathogens. This *critical review* (citing 114 references) summarizes the past two decades of research on the active site of catechol oxidase, and extensively discusses studies on model compounds of the enzyme in order to disclose the mechanism of the enzymatic conversion.

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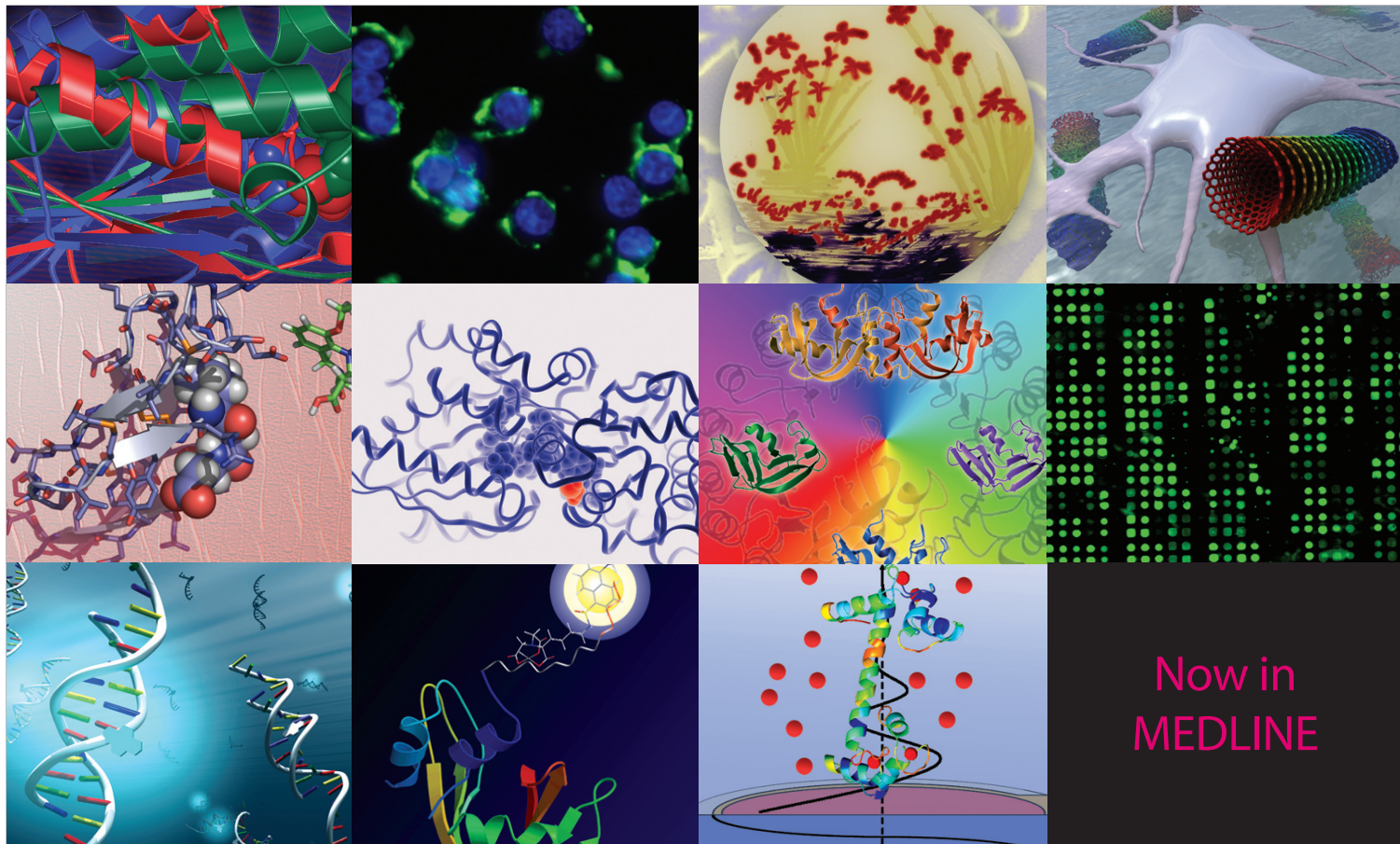
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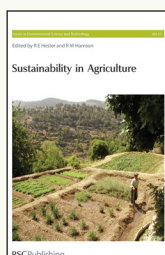
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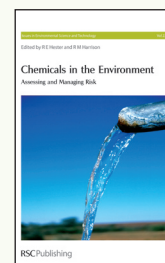
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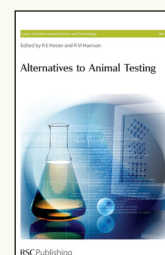
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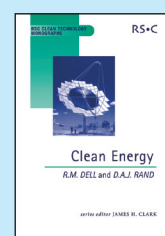
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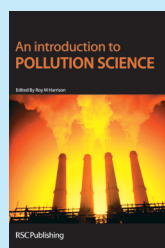


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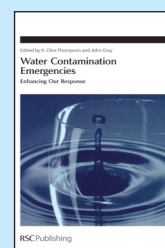


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