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Cover

See Fijis W. B. van Leeuwen, Willem Verboom and David N. Reinhoudt p. 753. Three factors govern the extraction of naturally occurring Ra²⁺: 1) its radioactivity, 2) transport across a liquid interface and 3) highly saline waters in which it is present. Front cover image reproduced by permission of Dr. Willem Verboom, *Chem. Soc. Rev.*, 2005, **34**, 753.

CHEMICAL SCIENCE

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Drawing together the research highlights and news from all RSC publications, *Chemical Science* provides a ‘snapshot’ of the latest developments across the chemical sciences showcasing newsworthy articles, as well as the most significant scientific advances.

Chemical Science

September 2005/Volume 2/Issue 9

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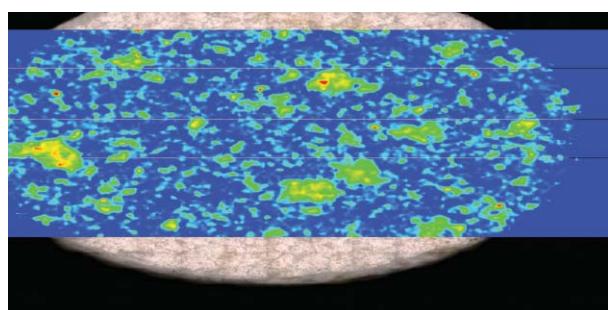
TUTORIAL REVIEWS

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Vibrational spectroscopy: a ‘vanishing’ discipline?

Robert J. Meier

One of the recent features in vibrational spectroscopy: imaging, powerful in studying a large variety of materials and biological structures.



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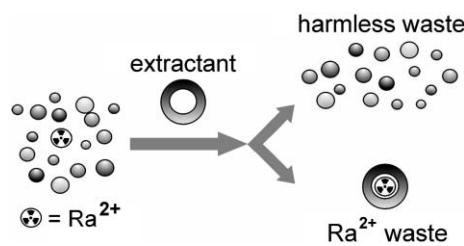
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Selective extraction of naturally occurring radioactive Ra²⁺

Fijt W. B. van Leeuwen, Willem Verboom* and David N. Reinhoudt*

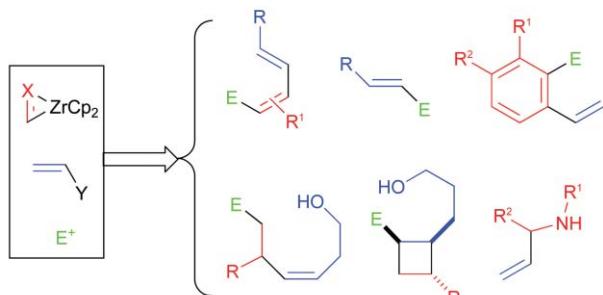
Ra²⁺ selective extractants require a difference in complexation properties compared to the alkali(ne earth) cations Na⁺, K⁺, Mg²⁺, Ca²⁺, Sr²⁺, and Ba²⁺. In this *tutorial review* different approaches to the extraction of Ra²⁺, using organic extractants, are described.



Coupling reactions of zirconocene complexes and heterosubstituted alkenes

José Barluenga,* Félix Rodríguez, Lucía Álvarez-Rodrigo and Francisco J. Fañanás

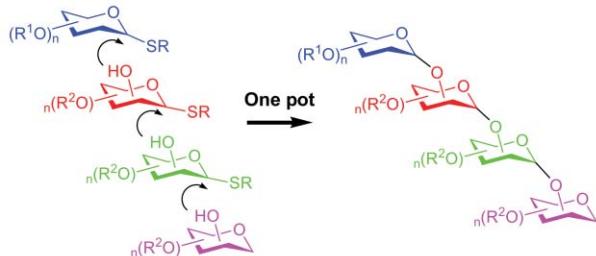
A great variety of interesting building blocks are easily available by the reaction of zirconocene complexes and heterosubstituted alkenes. As very simple starting materials are involved, the methodology is becoming a valuable tool for the synthesis of some molecules which are difficult to obtain following other procedures.



Thioglycosides in sequential glycosylation strategies

Jeroen D. C. Codée, Remy E. J. N. Litjens, Leendert J. van den Bos, Herman S. Overkleef and Gijsbert A. van der Marel*

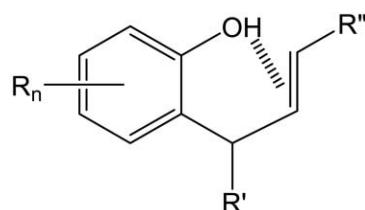
From time consuming, laborious assemblies to ingenious and elegant construction: sequential glycosylation strategies now allow the rapid and efficient synthesis of complex oligosaccharides.

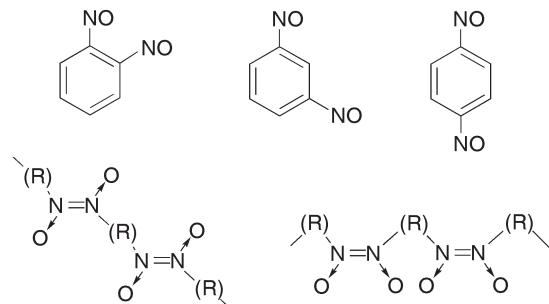


Proton, electron and energy transfer processes in excited phenol-olefin dyads

M. Consuelo Jiménez, Miguel A. Miranda* and Rosa Tormos

Dyads containing phenol and olefin subunits are versatile models for the investigation of intramolecular electron and energy transfer processes in the excited states. In addition to providing valuable fluorescence emission data, these systems are chemically productive, giving rise to irreversible photoreactions that constitute a fingerprint for the mechanism involved.





Dinitroso and polynitroso compounds

Brian G. Gowenlock* and George B. Richter-Addo*

Dinitroso and polynitroso compounds are relatively unexplored classes of compounds. Emerging ideas on their preparative routes, properties, and potential uses provide a framework for their further development.

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