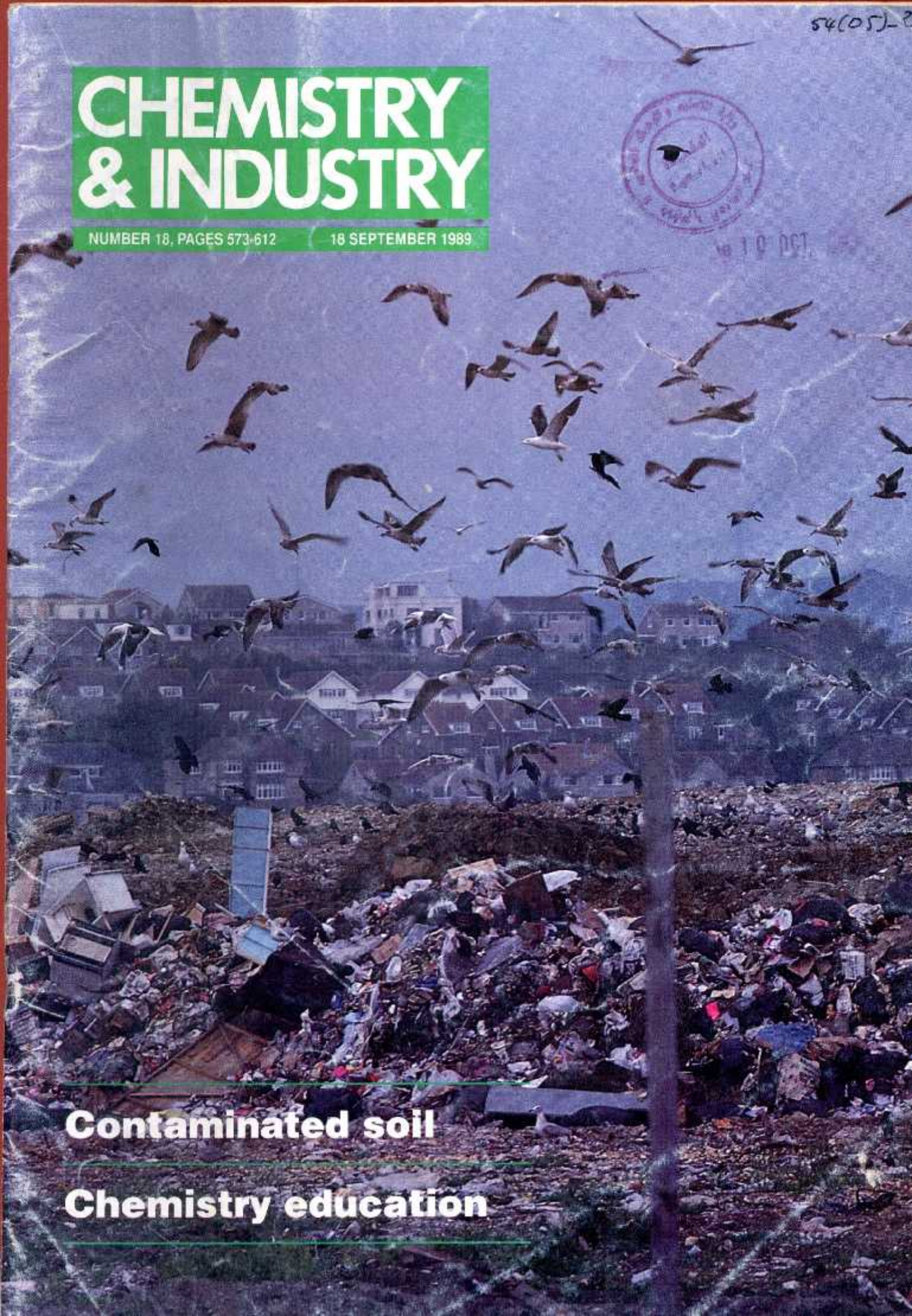


54(05)-2

# CHEMISTRY & INDUSTRY

NUMBER 18, PAGES 573-612 18 SEPTEMBER 1989



**Contaminated soil**  
**Chemistry education**

10 OCT. 1989

# CHEMISTRY & INDUSTRY

NUMBER 18, PAGES 573-612 18 SEPTEMBER 1989



## NEWS

Genetic release proposals criticised... Cambridge sets up plant... Access to environment information... Chemistry departments ranked... Cutting acid rain... USA benzene emissions ban... Effluent bleaching... New nitrification process developed... Venezuela moves on methanol... 574

## NEWS REPORTS

### Alaskan oil spill

Jeffrey Fox describes how bioremediation is being used to clean up the oil spill in Alaska.



580

### BASF

The German major outlines its plans for investing in the UK.

## CONTAMINATED SOIL

### Bioremediation of Contaminated Soil and Groundwater

Sjef Staps, of the Dutch National Institute of Public Health and Environmental Protection, outlines biological techniques for reclaiming contaminated land and water in the Netherlands, West Germany and the USA. 581

### Electro-Reclamation: Theory and Practice

Scientists at Geokinetics discuss how electrophoresis, electro-osmosis and electrolysis remove contaminants from soil. 585

### Setting standards for site clear-up

Martin Beckett, of the Department of the Environment's Contaminated Land Branch, explains the trigger concentration concept using metal soil contaminants and landfill gas as examples. 592



## EDUCATION

### Chemistry and Industry in the Classroom, Past and Future

Tony Travis shows how modern chemistry teaching in the UK is moving towards a more practical approach, ironically as it was during the discipline's infancy. 597



## COMMUNICATIONS TO THE EDITOR

Increased safety in automated solvent distillation.

John Coston and Andrew C Sutkowski  
Cyanide photo-oxidation using a TiO<sub>2</sub>-coated zeolite. 604

Xavier Domènech and José Peral  
An efficient procedure for cyclisation of 2'-hydroxychalcones into flavones. 606

Jagdish K Makrandi and Seema  
One-pot synthesis of indoles catalysed by montmorillonite under microwave irradiation. 607

Didier Villemin, Bouchta Labiad and Youssef Ouhilal  
607

## HIGHLIGHTS

Biosynthesis of brevetoxins... imine cycloadditions... hydromination using an organolanthanide catalyst... lanthanoid-based Lewis acid catalysts... the dangers of extrapolating conclusions in organometallic chemistry. 610



Cover photograph: Rubbish dump in Devon, courtesy of the Science Photo Library.

Editor Andrew Miller

Assistant editors Ferry Biedermann (News), Lorraine Walters

Editorial assistant Colleen Shannon

Editorial office 14-15 Belgrave Square, London SW1X 8PS. Telephone: 01-235 3681

Fax: 01-821 1698

Advertisement manager Geoff Harris

Advertisement office Harris Associates, 5 George Lane, Royston, Herts SG8 9AR.

Telephone: 0763 245322 Fax: 07632-45505

Management committee J C I. Cox (chairman), D E Bays, J Gregory, A J B Spawll

Editorial advisory board R deB Ashworth, J Coansell, F R Dennis, D Handy,

J F Kennedy, P Luckham, L McGrath, R H Prince, S Shoop, J M Sidwick,

R Smelt, A Wiseman

### Chemistry and Industry

(ISSN 0099-3068) is published semi-monthly by the Society of Chemical Industry, 14-15 Belgrave Square, London SW1X 8PS. All orders, accompanied with payment, should be sent directly to the Society of Chemical Industry, The Distribution Centre, Blackhorse Road, Leckworth, Herts SG6 1HN, England. Annual subscription rate for 1989: UK £128.00 Rest of the world (excl Japan) £152.00, USA \$245.00. Air freight and mailing in the USA by Publications Expediting Inc, 200 Meacham Avenue, Elmont, New York 11003. USA Postmaster: send address changes to Chemistry and Industry, Publications Expediting Inc, 200 Meacham Avenue, Elmont, New York 11003. Second class postage paid at Jamaica, New York 11431. All other despatches outside the UK by bulk airmail within Europe, accelerated surface post outside Europe. Printed in the UK by Strange the Printer Limited, Sleaford Road, Heathfield, East Sussex TN21 8HX, and at Granville House, 112 Bernumsey Street, London SE1 3TX.