

---

# The news magazine of the International Union of Pure and Applied Chemistry (IUPAC)

PRODUCTION EDITOR: Howard Waller

All correspondence to be addressed to The Editor, Chemistry International, IUPAC Secretariat, PO Box 13757, Research Triangle Park, NC 27709-3757, USA. Telephone: +1 (919) 485 8700. Fax: +1 (919) 485 8706. E-mail: secretariat@iupac.org and <http://www.iupac.org>

## Editorial Advisory Board

<i>Chairman:</i>	E. D. BECKER	<i>Secretary General</i>		
	E. BUNCEL	<i>CHEMRAWN Committee</i>	G. S. WILSON	<i>Division I</i>
	A. SMITH	<i>Committee on Chemistry and Industry</i>	G. J. LEIGH	<i>Division II</i>
	W. WARR	<i>Committee on Printed and Electronic Publications</i>	W. H. POWELL	<i>Division III</i>
	I. M. MILLS	<i>Interdivisional Committee on Nomenclature and Symbols</i>	A. ABE	<i>Division IV</i>
	M. E. PESTANA	<i>Committee on Teaching of Chemistry</i>	F. INGMAN	<i>Division V</i>
			A. E. POHLAND	<i>Division VI</i>
<i>Acting Secretary:</i>	J.W. JOST	<i>Executive Director</i>	(To be appointed)	<i>Division VII</i>

## Subscriptions

Six issues of *Chemistry International* will be published bimonthly in 1998 (one volume per annum) in January, March, May, July, September and November. The 1998 subscription rate including postage is GBP 75.00 (UK and overseas except North America) or USD 116.00 (US and Canada). The individual subscription rate is GBP 29.00 (UK and overseas except North America) or USD 42.00 (US and Canada). Microfiche subscriptions are available simultaneously with the printed edition, and microfilm at the end of the subscription year. Subscription orders may be placed directly with IUPAC's official publisher, Blackwell Science Ltd, PO Box 88, Oxford, UK; E-mail: [journals.cs@blacksci.co.uk](mailto:journals.cs@blacksci.co.uk). Information on this journal can be accessed at <http://www.blackwell-science.com/products/journals/chem.htm>

*Advertising.* Enquiries should be sent to the Advertising Manager, Blackwell Science Ltd, Osney Mead, Oxford OX2 0EL, UK. Telephone: +44 (0)1865 206206, Telex 83355 Medbok G, Fax +44 (0)1865 721205.

*Despatch.* The news magazine is despatched within Europe by surface mail, to other continents by various forms of air-speeded delivery: to the US\* by air freight for forwarding by periodicals post, to India by air freight for guaranteed local delivery, and to all other countries by Accelerated Surface Post.

## Reproduction of Articles

Unless there is a footnote to the contrary, reproduction or translation of articles in this issue is encouraged, provided that it is accompanied by a reference to the original in *Chemistry International*. The Blackwell Science logo is a trade mark of Blackwell Science Ltd registered at the United Kingdom Trade Marks Registry.

This journal is included in the ADONIS service, whereby copies of individual articles can be printed out from compact discs (CD-ROM) on demand.

\*Periodicals postage paid at Rahway, NJ. Post Master, send address changes to *Chemistry International*, c/o Mercury Airfreight International Inc., 2323 Randolph Avenue, Avenel, NJ 07001, USA.

**Front cover:** Project Sediba: a programme for upgrading physical science and mathematics teachers in Southern Africa (see page 6).

---

*President:* J. JORTNER (*Israel*)  
*Vice-President* A. HAYES (*UK*)  
*Past-President:* A. E. FISCHLI (*Switzerland*)

*Secretary-General:* E. D. BECKER (*USA*)  
*Treasurer:* J. M. WARD (*UK*)

## IUPAC Secretariat

PO Box 13757, Research Triangle Park, NC 27709-3757, USA. Tel.: +1 (919) 485 8700. Fax: +1 (919) 485 8706. E-mail: secretariat@iupac.org

The International Union of Pure and Applied Chemistry (IUPAC), formed in 1919, is a voluntary non-governmental, non-profit association of organizations, each of which represents the chemists of a member country.

Its objectives are:

- to promote continuing co-operation among the chemists of the member countries
- to study topics of international importance to pure and applied chemistry which need standardization, or codification
- to co-operate with other international organizations which deal with topics of a chemical nature
- to contribute to the advancement and understanding of pure and applied chemistry in all its aspects

The membership of IUPAC presently comprises 42 countries, each represented by a national organization, such as an academy of science or research council.

## National Adhering Organizations

Academy of Scientific Research and Technology (**Arab Republic of Egypt**)

Asociación Química Argentina (**Argentina**)

Australian Academy of Science (**Australia**)

Österreichische Akademie der Wissenschaften (**Austria**)

Nationaal Comité voor Scheikunde/Comité National de Chimie (**Belgium**)

Brazilian Chemistry Committee for IUPAC (**Brazil**)

National Research Council of Canada (**Canada**)

Sociedad Chilena de Química (**Chile**)

Chinese Chemical Society, Beijing and Chemical Society located in Taipei (**China**)

Croatian Chemical Society (**Croatia**)

Czech National Committee for Chemistry (**Czech Republic**)

Det Kongelige Danske Videnskabernes Selskab (**Denmark**)

Deutscher Zentralausschuss für Chemie (**Federal Republic of Germany**)

Suomen Kemian Seura (**Finland**)

Comité National Français de la Chimie (**France**)

Association of Greek Chemists (**Greece**)

Hungarian Academy of Sciences (**Hungary**)

Indian National Science Academy (**India**)

Royal Irish Academy (**Ireland**)

Israel Academy of Sciences and Humanities (**Israel**)

Consiglio Nazionale delle Ricerche (**Italy**)

Science Council of Japan (**Japan**)

Kuwait Chemical Society (**Kuwait**)

Koninklijke Nederlandse Chemische Vereniging (**Netherlands**)

Royal Society of New Zealand (**New Zealand**)

Norsk Kjemisk Selskap (**Norway**)

Chemical Society of Pakistan (**Pakistan**)

Polska Akademia Nauk (**Poland**)

Sociedade Portuguesa de Química (**Portugal**)

Colegio de Químico de Puerto Rico (**Puerto Rico**)

Korean Chemical Society (**Republic of Korea**)

Foundation for Research Development (**Republic of South Africa**)

Russian Academy of Sciences (**Russia**)

King Abdulaziz City for Science and Technology (**Saudi Arabia**)

Slovak National Committee for Chemistry (**Slovakia**)

Slovenian Chemical Society (**Slovenia**)

Comisión Interministerial de Ciencias y Tecnología (**Spain**)

Svenska Nationalkommittén för Kemi (**Sweden**)

Neue Schweizerisches Chemische Gesellschaft (**Switzerland**)

Royal Society (**United Kingdom**)

National Research Council, National Academy of Sciences (**USA**)

Union of Yugoslav Chemical Societies