# IUPAC

### Advancing Worldwide Chemistry





### METROLOGY AND QUALITY ASSURANCE Challenges for the analytical chemist

#### Aleš Fajgelj

IAEA International Atomic Energy Agency Agency's Laboratories Seibersdorf and Vienna Quality Systems Manager

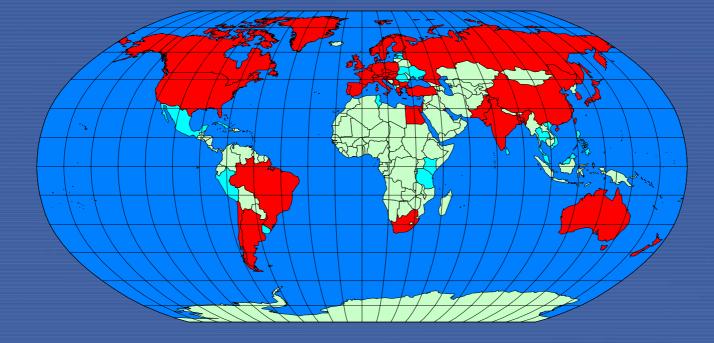
IUPAC International Union of Pure and Applied Chemistry Interdivisional Working Party on Harmonization of Quality Assurance – Chairman Analytical Chemistry Division – Vice President



- **IUPAC's mission** is to advance the worldwide aspects of the chemical sciences and to contribute to the application of chemistry in the service of Mankind.
  - Promotes norms, values, ethics of science
  - Advocates free exchange of scientific information and access of scientists
  - Addresses global issues as a scientific, international, non-governmental, objective body



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### 45 National Adhering Organizations (NAOs) 21 Associate National Adhering Organizations (ANAOs)



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#### **IUPAC Organization** Divisions and Standing Committees manage IUPAC's scientific work

- Physical & Biophysical Chemistry
- Inorganic Chemistry
- Organic & Biomolecular Chemistry
- Polymer
- Analytical Chemistry
- Chemistry & the Environment
- Chemistry & Human Health
- Chemical Nomenclature & Structure Representation
- Committee on Chemistry and Industry (COCI)
- Committee on Chemistry Education (CCE)
- CHEMRAWN Committee
- Committee on Printed and Electronic Publications (CPEP)



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### **Major IUPAC Activities**

- Development of the Language of Chemistry
  - Nomenclature, Symbols, Terminology
- Standardization of Chemistry Methods
  - Data Presentation
  - Study of Analytic Methods
- Critical Evaluation of Physico-Chemical Data
  - Atomic Weights
  - Thermodynamic Data
  - Kinetic Data



### Major IUPAC Activities (Cont.)

- Data Exchange Standards for Computers and Instruments
- Sponsorship of Conferences
  - Biennial IUPAC Congress (Beijing, China 2005, Turin, Italy 2007)
  - More than 30 Specialized Symposia each Year
- Chemistry Education
- Industrial Safety and Environmental Programs
- CHEMRAWN Conferences addressing Chemistry and Societal Impact



### **Proposals for Projects**

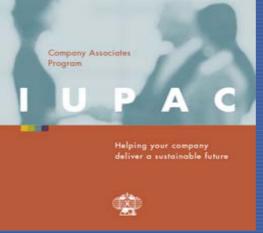
- **Anyone** with a good idea can submit a proposal. IUPAC projects address issues of significance to the global chemistry community:
  - Nomenclature, terminology, and symbols
  - Validated and compiled data
  - Standard methods and procedures
  - Education and public understanding of chemistry
  - Any subject that requires development of consensus among chemists worldwide

#### More information: www.iupac.org



### **Company Associate Program**

 Relationships with internationally-based industrial corporations and scientific businesses allows for the exchange of information regarding current issues influencing Chemistry and Industry. The Committee on Chemistry and Industry (COCI) has direct involvement with Company Associates.



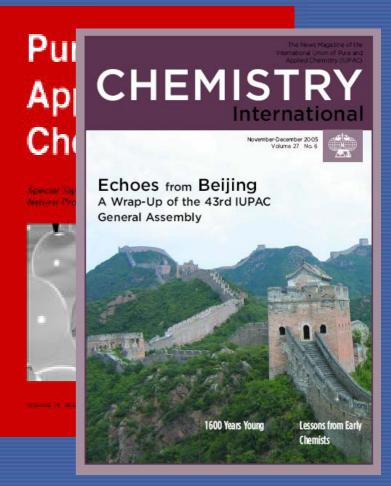


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### **Publications**

#### • Pure and Applied Chemistry

- IUPAC recommendations and reports, special topic articles, and lectures from symposia.
- Chemistry International
  - Bimonthly news magazine
- Book series, includes
  - Compendia of Nomenclature and Terminology
  - Chemistry for the 21st Century
  - International Thermodynamic Tables of the Fluid State
  - Analytical and Physical Chemistry of Environmental Systems
  - Solubility Data Series and others!





www.iupac.org **Connect with IUPAC**  Current IUPAC projects Reports and recommendations Chemistry International Conference Calendar •*E*-news Nomenclature and Terminology Book Orders (also from Amazon.com)

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#### **ACD structure:**

2006-2007:

President: Vice President: Secretary: Past President: Prof. Ryszard Lobinski Dr. Ales Fajgelj Prof. Roger M. Smith Prof H. Kipton J. Powell

+ 6 TMs, 6 AMs, 6 NRs, 1 Provisional Member

Interdivisional Working Party on Harmonization of Quality Assurance (WPQA) chaired by Dr. Ales Fajgelj

Subcommittee on Solubility and Equilibrium Data (SSED) chaired by Prof. Heinz Gamsjäger



AEA

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QUALITY ASSU HARMONISEI RECOVERY I	Pure Appl. Chem., Vol. 73, No. 8, pp. 13 © 2001 IUPAC INTERNATIONAL UNION ANALYTICA COMMISSION ON GENERAL	Pure Appl. Cham., Vol. 74, No. 5, pp. 83 © 2002 IUPAC INTERNATIONAL UNION ANALYTICAL, APPLI PHYSICAL	Рите Аррі. Cham., Vol. 77, No. 5, pp. 827–84 DOI: 10.1351/рас200577050827 © 2005 IUPAC INTERNATIONAL UNION OF F	
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MICHAEL THOMPSON <sup>1</sup> , STEP	Prepar JÖRGEN VESSMAN <sup>1,†</sup> , RALUCA I. STEI WOLFGANG LINDNER <sup>4</sup> , DUNCA			ANALYTICAL CHEMISTRY DIVISION*
Department of Chemistry, Birkbeck Laboratory of the Government Chem International Atomic Energy Agency	WOLFGANG LINDNER , DUNCA HEI	(110401	(IUPAC Recomm	INTERDIVISIONAL WORKING PARTY FOR HARMONIZATION OF QUALITY ASSURANCE SCHEMES
MAFF Food Science Laboratory, N	<sup>1</sup> Astra Zeneca R&D Mohada, S-43 University of Pretocia. Pretoria, 0002, S Chemie, Friedrich-Schiller-Universität Ien Analytical Chemistry, Universität Jen Chemistry, The Queen's University of Laboratories Seibersdorf, Internationa <sup>7</sup> Institut für Analytik und Umweltchemie Strasse, D-0	(IUPAC 1 Resulting from the Symposium on Harn Laboratories, Budapest, Hungary, 4–5 No and / Prepar MICHAEL THOMPSON <sup>1</sup> , STEPI <sup>1</sup> Department of Chemistry, Birkbeck Co. <sup>2</sup> Laboratory of the Government Chemist <sup>3</sup> Food Standards Agency, c/o Institute of F	Propared for PAOLO DE ZORZI <sup>1</sup> , SABRINA BARBIZ ALES FAJGELJ <sup>34</sup> , DAVID MOORE <sup>4</sup> , UMBER <sup>1</sup> Agenzia per la Protezione dell'Ambiente e pe Ambientale, Via Castel Romano, 100-102, l Environment, Via R Rubotinico, 54, 20134 Milam and Vienna, Wagramer Stratzse 5, A-1400, Vie National Laboratory, Los Alamos, NM 87545, U Geographical Sciences, Utre-cht University, The Ni	THE INTERNATIONAL HARMONIZED PROTOC FOR THE PROFICIENCY TESTING OF ANALYT CHEMISTRY LABORATORIES (IUPAC Technical Report) MICHAEL THOMPSON <sup>1</sup> , STEPHEN L. R. ELLISON <sup>24</sup> , AND ROGER WOOD <sup>1</sup> School of Biological and Chemical Sciences, Birkbeck College, University of Lom <sup>1</sup> School of Biological and Chemical Sciences, Birkbeck College, University of Lom <sup>1</sup> School of Biological and Chemical Sciences, Birkbeck College, University of Lom <sup>1</sup> School of Biological and Chemical Sciences, Birkbeck College, University of Lom <sup>1</sup> School of Biological and Chemical Sciences, Coll Research, Norwich Research, Norwich Research, Norwich Research, Norwich NR4 7UA, UK
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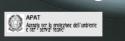
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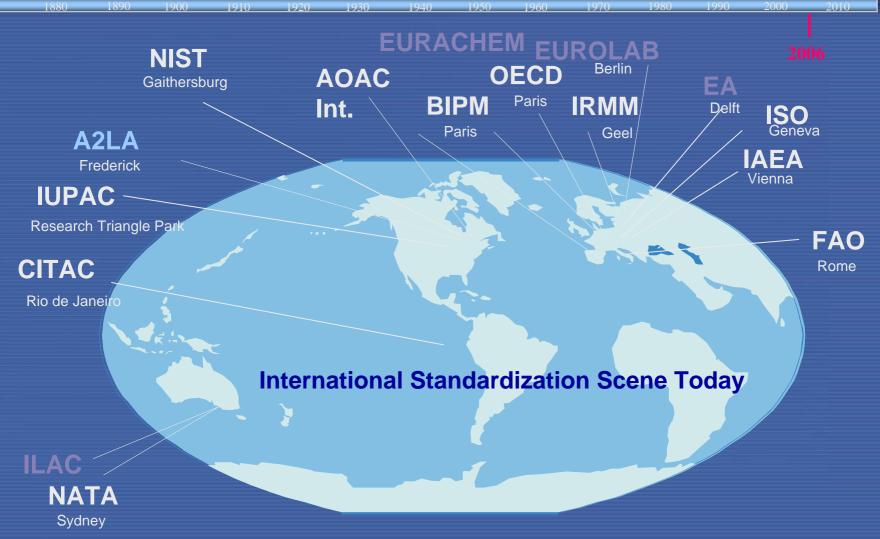
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