

# I U P A C

Advancing Worldwide Chemistry



# METROLOGY AND QUALITY ASSURANCE

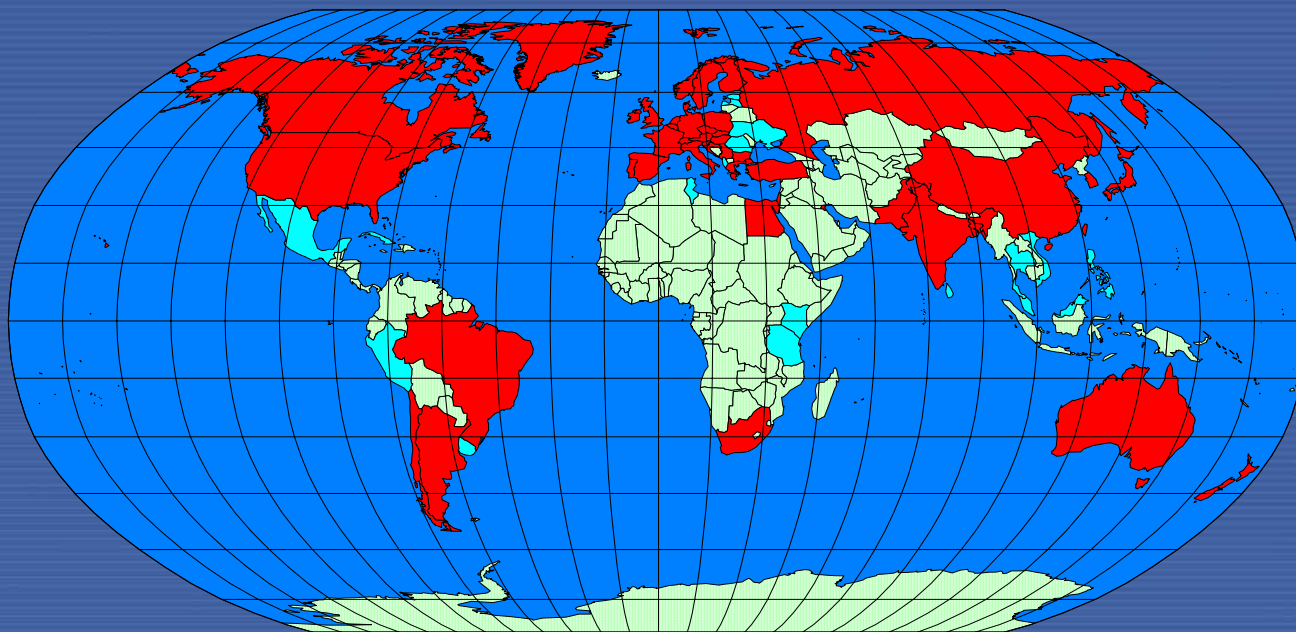
## Challenges for the analytical chemist

**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



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

## 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)

# 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

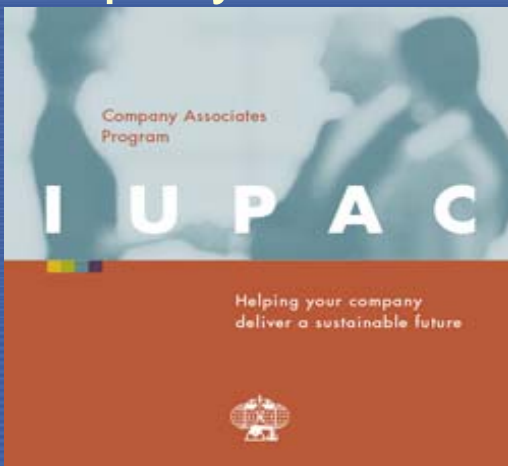
- **Anyone** with a good idea can submit a proposal. IUPAC projects address issues of significance to the global chemistry community:
  - Nomenclature, terminology, and symbols
  - Validated and compiled data
  - Standard methods and procedures
  - Education and public understanding of chemistry
  -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

More information: [www.iupac.org](http://www.iupac.org)



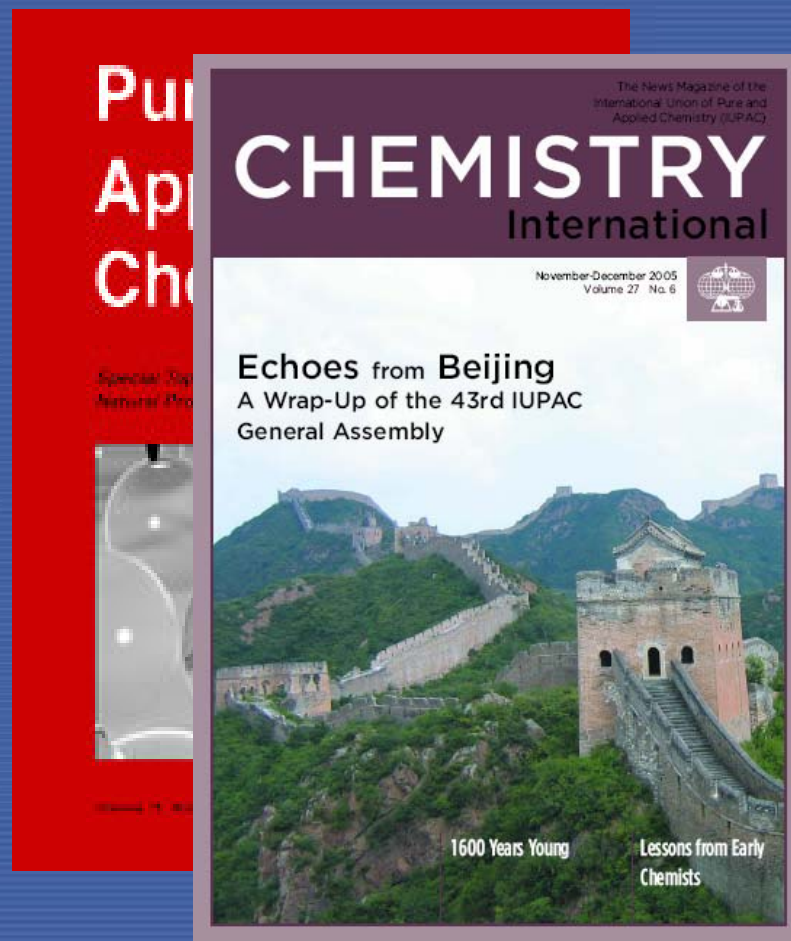
# Company Associate Program

- 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.



# 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)



**ACD structure:**

2006-2007:

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

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

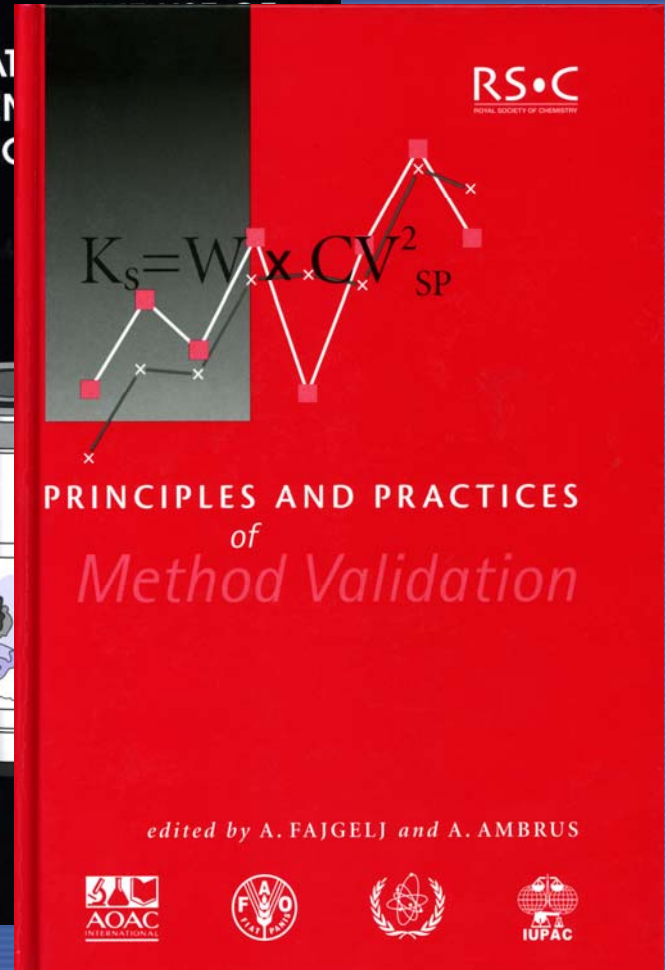
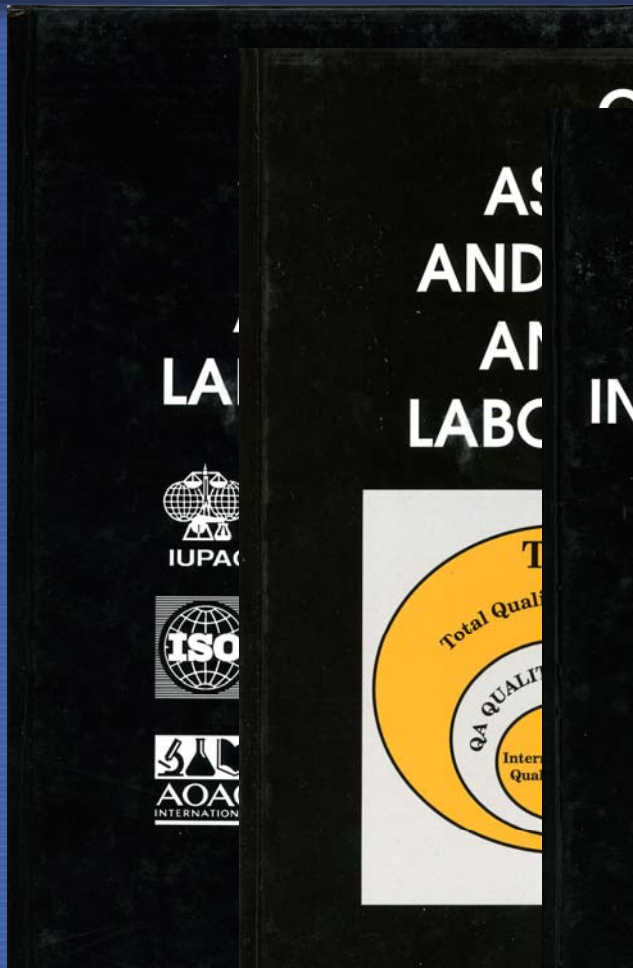
Interdivisional Working Party on Harmonization of Quality Assurance  
(WPQA) chaired by Dr. Ales Fajgelj

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



I U P A C

Advancing Worldwide Chemistry



IUPAC

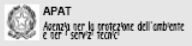

L'AZIONE INTERNAZIONALE

MOXUSTOIA

**COMBINING  
AND REPORTING  
ANALYTICAL  
RESULTS.  
THE ROLE OF  
(metrological)  
TRACEABILITY AND  
(measurement)  
UNCERTAINTY FOR  
COMPARING  
ANALYTICAL RESULTS**

Rome, 6-8 March 2006

**Final Programme**

ROME, 6-8 MARCH 2006


**ORGANIZED BY**


Agenzia per la protezione dell'ambiente e per i servizi tecnici (APAT)  
 International Union of Pure and Applied Chemistry (IUPAC)

**SPONSORED BY**







**IAEA**  
 Centro Sviluppo Materiali S.p.A. (CSM)  
 International Atomic Energy Agency (IAEA)  
 Consultative Committee for Amount of Substance -  
 Metrology in Chemistry (BIPM CCQM)  
 Co-operation on International Traceability in  
 Analytical Chemistry (CITAC)  
 ISO Committee on Reference Materials (ISO REMCO)  
 United Nations Industrial Development Organization (UNIDO)

**PROGRAM COMMITTEE**

Maria Belli (APAT)  
 Paolo de Zorzi (APAT)  
 Ales Fajgelj (IAEA, IUPAC)  
 Umberto Sansone (IAEA)  
 Fabrizio Falcioni (CSM)

**ORGANIZING COMMITTEE**

Silvia Rosamilia (APAT)  
 Giorgia Gelati (CSM)  
 Teresa Guagnini (APAT)  
 Fabrizio Babalini (APAT)

INTERNATIONAL WORKSHOP

COMBINING AND REPORTING ANALYTICAL RESULTS. THE ROLE OF (METROLOGICAL) TRACEABILITY  
 AND (MEASUREMENT) UNCERTAINTY FOR COMPARING ANALYTICAL RESULTS

1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010

