

IUPAC

Analytical Chemistry Division

Serving the Analytical Chemistry Community Worldwide



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Mission Statement

Analytical chemistry is a scientific discipline that develops and applies methods, instruments, and strategies to obtain information on the composition and nature of matter in space and time, as well as on the value of these measurements, i.e., their uncertainty, validation, and/or traceability to fundamental standards.

The Analytical Chemistry Division in the IUPAC catalyzes interactions between the scientific community and users of analytical methodology and data, and beneficiaries of analytical results, such as international organizations (IAEA, OECD, WHO), accreditation bodies (ISO), standards bodies (BIPM, NIST), national chemical societies, and society.



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The areas of activity

- the critical and comparative evaluation of established and emerging analytical methods (including the harmonization of associated terminology, proficiency testing, and other inter-laboratory comparisons);
- the recommendations for sample collection, preparation, storage, and handling;
- the compilation of data used in analytical chemistry and their critical evaluation; and
- the definition of recommended methods and proper application of QC and QA procedures.



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Analytical Chemistry Division Committee

Titular Members

President: R. Lobinski (France)
Vice President: A. Fajgelj (Slovenia)
Secretary: R. M. Smith (United Kingdom)
Past President: H.K.J. Powell (New Zealand)

Prof. Mauro L. Bonardi (Italy)
 Prof. Paul De Bièvre (Belgium)
 Prof. David Brynn Hibbert (Australia)
 Prof. Jan Åke Jönsson (Sweden)
 Prof. Jan Labuda (Slovakia)
 Prof. Walter Lund (Norway)

Associate Members

Dr. Z.F. Chai (China/Beijing)
 H. Gamsjäger (Austria)
 U. Karst (Netherlands)
 W. Kutner (Poland)
 P. Minkinen (Finland)
 K.K. Murray (United States)

National Representatives

E.A.G. Zagatto, Brazil
 C. Balarew, Bulgaria
 Z. Mester, Canada
 W.C. Wang, China/Beijing
 H. Watarai, Japan
 B. Spivakov, Russia
 E. Domínguez, Spain
 S. Kocaoba, Turkey
 N. Torto (Botswana)

- Interdivisional Working Party for Harmonization of Quality Assurance (A. Fajgelj)
- Subcommittee on Solubility and Equilibrium Data (H. Gamsjäger)

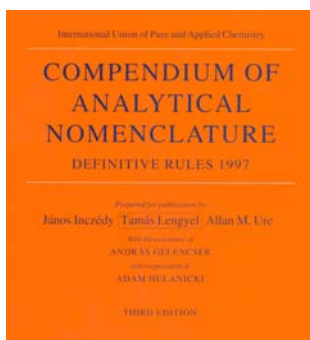


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Analytical Chemistry Division Ressources (1)

Ch 1: Fundamental Terms and Quantities
 Ch 2: Result Presentation
 Ch 3: Solution Thermodynamics
 Ch 4: Balances
 Ch 5: Thermoanalytical Methods
 Ch 6: Titrimetry
 Ch 7: Automatic Analysis
 Ch 8: Electrochemical
 Ch 9: Separations
 Ch 10: Spectrochemical
 Ch 11: Other Optical
 Ch 12: Mass Spectrometry
 Ch 13: Diffraction
 Ch 14: Magnetic Methods
 Ch 15: Kinetic Methods
 Ch 16: Radioanalytical methods
 Ch 17: Surface Analysis
 Ch 18: QA Processes
 Ch 19: Applications



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Analytical Chemistry Division Resources (2)

The IUPAC Stability Constants Database

SC-Database - the definitive database of metal-complex stability constants - developed by Academic Software- gives very fast access to all significant published metal-ligand stability constants with over 22000 literature references and with interactive applications to display speciation curves, to correct for temperature or ionic strength changes etc.

IUPAC-NIST Solubility Database

IUPAC's Solubility Data Series (SDS) is an exhaustive compilation and critical evaluation of all the world's published results of experimental determinations of solubility. Since 1979, over 70 SDS volumes have been published, including evaluated data on the solubility of gases in liquids, liquids in liquids, and solids in liquids. The IUPAC-NIST Web site allows users to examine over 3600 multi-component systems containing over 1000 chemical substances. Many of the systems (ca. 350) have been critically evaluated.



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Your project with IUPAC Analytical Chemistry Division

An IUPAC project addresses an issue of significance to the global chemistry community

Focus areas:

- Terminology, validated and compiled data
- Critical evaluation of methods and procedures
- Education and public appreciation of analytical chemistry
- Any subject that requires development of consensus among chemists worldwide



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Use of the ACD budget 2006 - 2007

	Commitments (Actual)	% of Total Budget (Guideline: 70 %)	Operations (Actual)	% of Total Budget (Guideline: 30 %)	Total Operations & Commitments (Actual)	Total Operations & Commitments (Budget)	Over/ (Under)	Per Cent Spent
Division I	42,500	65.1%	14,988	23.0%	57,488	65,300	(7,812)	88.0%
Division II	16,700	31.4%	24,898	46.8%	41,598	53,200	(11,602)	78.2%
Division III	12,500	20.7%	16,483	27.3%	28,983	60,400	(31,417)	48.0%
Division IV	42,100	80.2%	11,471	21.8%	53,571	52,500	1,071	102.0%
Division V	37,750	66.7%	18,080	31.9%	55,830	56,600	(770)	98.6%
Division VI	47,250	69.5%	23,154	34.1%	70,404	68,000	2,404	103.5%
Division VII	31,500	54.0%	31,631	54.3%	63,131	58,300	4,831	108.3%
Division VIII	51,000	63.8%	35,411	44.3%	86,411	80,000	6,411	108.0%

2007-041-1-500 Mechanistic Aspects of Chemical Vapor Generation of volatile hydrides for trace element determination

TGC: Alessandro D'Ulivo USD 5000 (4300 USD from the general reserve)



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2006-2007 Biennium projects

- 2005-035-2-500 M. Belli Trace elements analysis: role of grain size distribution in solid reference materials
- 2005-041-2-500 Zoltan Mester Critical report regarding the determination of selenomethionine in selenized yeast supplements
- 2006-022-1-500 David Moore Spectrochemical Analysis - Conversion of Orange Book Chapter 10 to Glossary
- 2006-026-1-500 Jan Labuda Electrochemical DNA-based biosensors: terms and methodology
- 2006-037-1-500 Ryszard Lobinski Metal-focussed -omics: guidelines for terminology and critical evaluation of analytical approaches
- 2006-010-1-500 Igor V. Sukhno The adjustment, estimation and uses of equilibrium reaction constants in aqueous solution
- 2007-041-1-500 A. Ullivo Mechanistic Aspects of Chemical Vapor Generation of volatile hydrides for trace element determination



Typical funding 4 000 – 6 000 USD

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2007-010-2-500 Peter Bode International harmonized protocol for standard preparation, irradiation and measurement for assuring metrologically traceable results in neutron activation analysis
4,500 out of 6,500

2006-016-1-200 Paul Renne Recommendations for isotope data in geosciences
2,000 out of 4,900

2005-048-2-100 Trevor Letcher Solubility and Thermodynamic properties related to Environmental Issues
1,500 4,500



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Supplements

- 2007-013-1-500 Igor V. Sukhno The adjustment, estimation and uses of equilibrium reaction constants in aqueous solution - supplement 2006-010-1-500
1,000 1,000
- 2007-042-1-500 Ayako Goto and Hiroshi Miyamoto, Solubility data of compounds relevant to human health. Solubility of hydroxybenzoic acids and hydroxybenzoates - extension 2002-036-1-1,000 1,000
- 2007-043-1-500 Masakazu Makino and Ayako Goto Solubility data of compounds relevant to human health. Solubility of halogenated aromatic hydrocarbons - extension 2002-037-1-500 600 600
- 2007-044-1-500 J. Eysseletova Solubility data related to industrial processes. Solubility in systems with lithium and/or sodium nitrates
1,000 1,000



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2006-2007 Published technical reports

- Chemical speciation of environmentally significant metals with inorganic ligands Part 2: The Cu²⁺-OH⁻, Cl⁻, CO₃²⁻, SO₄²⁻, and PO₄³⁻ systems (IUPAC Technical Report)
- Pure Appl. Chem. 79(5), 895-950, 2007
- Guidelines for potentiometric measurements in suspensions Part B. Guidelines for practical pH measurements in soil suspensions (IUPAC Recommendations 2006)
- Pure Appl. Chem. 79(1), 81-86, 2007
- Guidelines for potentiometric measurements in suspensions Part A. The suspension effect (IUPAC Technical Report)
- Pure Appl. Chem. 79(1), 67-79, 2007
- Guidelines for NMR measurements for determination of high and low pKa values (IUPAC Technical Report)
- Pure Appl. Chem. 78(3), 663-675, 2006
- Uncertainty estimation and figures of merit for multivariate calibration (IUPAC Technical Report)
- Pure Appl. Chem. 78(3), 633-661, 2006
- The International Harmonized Protocol for the proficiency testing of analytical chemistry laboratories (IUPAC Technical Report)
- Pure Appl. Chem. 78(1), 145-196, 2006



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