Task force:
Inventory of Definitions in Analytical Chemistry

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An inventory of documents containing accepted and used definitions in analytical chemistry has been performed. The documents have been grouped in various categories. An inventory of this kind can be made very comprehensive, however, a selection of relevant documents has deliberately been made. Many documents contain definitions that have been worked out in other chemistry branches than analytical chemistry. These documents have been included in this list since many of these documents are useful also for analytical chemists. Finally, a number of "glossaries" have been included.

Contents

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1. Documents produced by international standardisation bodies

1.1 General definitions

- International Vocabulary of basic and general terms in metrology (acronym: VIM) Joint issue of BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OIML. ISO, Geneva, Switzerland, 1993. ISBN 92-67-01-75-1
- ISO Guide 30:1992 Terms and definitions used in connection with reference materials
- IUPAC Compendium of Chemical Terminology http://www.iupac.org/publications/compendium/

1.2 Statistics

- ISO 3534-1:1993 Statistics -- Vocabulary and symbols -- Part 1: Probability and general statistical terms
- ISO 3534-2:1993 Statistics -- Vocabulary and symbols -- Part 2: Statistical quality control
- ISO 3534-3:1999 Statistics -- Vocabulary and symbols -- Part 3: Design of experiments
- ISO 5725-1:1994 Accuracy (trueness and precision) of measurement methods and results -- Part 1: General principles and definitions
- ISO 11843-1:1997 Capability of detection -- Part 1: Terms and definitions

1.3 Air, water and soil

- ISO 4225:1994 Air quality -- General aspects – Vocabulary
- ISO 6879:1995 Air quality -- Performance characteristics and related concepts for air quality measuring methods
- ASTM D1356-00a Standard Terminology Relating to Sampling and Analysis of Atmospheres
- ISO 6107-1 to -9 Water quality -- Vocabulary
- ISO 11074-2:1998 Soil quality -- Vocabulary -- Part 2: Terms and definitions relating to sampling

1.4 Industrial

- ISO 1213-2:1992 Solid mineral fuels -- Vocabulary -- Part 2: Terms relating to sampling, testing and analysis
- ISO 6206:1979 Chemical products for industrial use -- Sampling – Vocabulary
- ISO 7404-1:1994 Methods for the petrographic analysis of bituminous coal and anthracite -- Part 1: Vocabulary
- ISO 7504:2001 Gas analysis – Vocabulary

1.5 Spectrometry

- ISO 6286:1982 Molecular absorption spectrometry -- Vocabulary -- General -- Apparatus
- ISO 6955:1982 Analytical spectroscopic methods -- Flame emission, atomic absorption, and atomic fluorescence – Vocabulary

2. Documents referring to IUPAC definitions

2.1 IUPAC recommendations

- IUPAC recommendations on nomenclature and symbols. Anon. Cookson Group plc, Cookson Technology Centre, Oxon, UK. Pol. J. Chem. (1994), 68(12), 2745. CODEN: PJCHDQ ISSN: 0137-5083. Journal; Miscellaneous written in English. AN 1995:384263
  Abstract
  A provisional version of this Glossary was published in the period 1983-1984 in the Newsletters for the European Photo chemistry Assocn., the Inter-American Photochemistry Society, and the Japanese Photochemistry Assocn. The first edition of the "Glossary of Terms Used in Photochemistry" was prepared for publication in the Commission by S.E. Braslavsky and K.N. Houk. It was published in 1988 (Pure & Appl. Chem. (1988) 60, 1055-1106) and has since been incorporated in the "Handbook of Org. Photochem." Vol. II, J.C. Scaiano Ed., CRC Press Inc., Boca Raton, 1989, and in "Photochronism:Mols. and Systems", H. Durr and H. Bouas-Laurent Eds., Elsevier Science Publishers, 1990. In the present second edition a number of minor errors encountered in the first edition have been cor. and furthermore it has been expanded esp. to incorporate terms related to (photoinduced) electron transfer processes.

- IUPAC recommendations on nomenclature and symbols. Anon. Pol. J. Chem. (1996), 70(1), 136-137. CODEN: PJCHDQ ISSN: 0137-5083. Journal; Miscellaneous written in English. AN 1996:282064
  Abstract
  The foregoing recommendations entitled: "Names and symbols of transfermium elements" were issued last year as definitive in the official journal of IUPAC, Pure and Applied Chem., Vol 66 No. 12, pp. 2419-2421, 1994. An a consequence of the criticism arising, esp. from USA, the IUPAC Bureau at its meeting in Guilford (UK) on 8th-9th August 1995 has reconsidered its decision at Antwerp (Belgium) in 1994, and decided to adopt the recommendations as provisional, in full accordance with Bylaw 2.11.

- Recommendations on use of the term *amplification reactions*. Belcher, R.; Stephen, W. I. Univ. Birmingham, Birmingham, UK. Pure Appl. Chem. (1982), 54(12), 2553-6. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 98:136650 AN 1983:136650
  Abstract
  IUPAC recommendations on the use of the term amplification reactions in analysis are presented.

- IUPAC recommendations on nomenclature and symbols. *Chemically modified electrodes*: recommended terminology and definitions. Anon. Pol. J. Chem. (1995), 69(11), 1593. CODEN: PJCHDQ ISSN: 0137-5083. Journal; Miscellaneous written in English. AN 1996:

- Recommendations for nomenclature and symbolism for *mass spectroscopy* (including an appendix of terms used in vacuum technology) (IUPAC Recommendations 1991). Todd, John F. J. IUPAC Commission on Molecular Structure and Spectroscopy,

Physical Chemistry Division, IUPAC, Oxford, UK. Int. J. Mass Spectrom. Ion Processes (1995), 142(3), 211-40. CODEN: IJMPDN ISSN: 0168-1176. Journal written in English. CAN 123:21090 AN 1995:585083
Abstract
The recommendations refer to nomenclature relating to theoretical, technological, and experimental aspects of mass spectroscopy, and to the symbolism used when presenting and discussing mass spectral data. In 1974, the Com. on Anal. Nomencl. of IUPAC issued recommendations for nomenclature of mass spectroscopy which are as definitions of some of the terms used in this subject. In 1978 the Com. on Mol. Struct. and Spectrosc. updated and extended these recommendations and made further recommendations concerning the use of symbols, acronyms, abbreviations and newly invented jargon. Because the subject continues to expand rapidly, a further compilation of defined terms has become necessary, and the opportunity was taken to incorporate previous relevant recommendations concerning nomenclature and symbolism to produce a single comprehensive document. A further set of terms relating to vacuum technology, provided through the generosity of the Am. Vac. Soc. was appended. This set of recommendations should replace the earlier publications on the subject.

- Names, symbols, definitions, and units of quantities in *optical spectroscopy* (Recommendations 1984). IUPAC Commission on Molecular Structure and Spectroscopy, UK. Pure Appl. Chem. (1985), 57(1), 105-20. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 102:103264 AN 1985:103264
  Abstract
  Definitions and recommended names and symbols are given for the quantities used in the practice of optical spectroscopy (UV, visible, and IR). The report is a shortened and simplified version, with some additions and modifications, of "Quantities and Units in Clin. Chem., Optical Spectroscopy Part 1., Theor. Outline and General Quantities (Provisional Recommendations)", IUPAC Information Bulletin 1978, No. 3, p. 241-259.

- Definitions of terms relating to degradation, aging, and related chemical transformations of *polymers* (IUPAC Recommendations). Anon. Indian J. Chem. Technol. (1995), 2(4), 236. CODEN: ICHTEU ISSN: 0971-457X. Journal; Miscellaneous written in English. AN 1995:661731

2.2 Various branches of "chemistry"

- Glossary of *atmospheric chemistry* terms, Calvert, Jack G. IUPAC Commission on Atmospheric Chemistry, Appl. Chem. Div., IUPAC, Oxford, UK. Pure Appl. Chem. (1990), 62(11), 2167-219. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 114:66365 AN 1991:66365
  Abstract
  A glossary of terms used in atmospheric chemistry and related fields is compiled, including to those related to clouds, solar radiation, air quality control, etc.

- List of quantities in *clinical chemistry*. IUPAC Comm. on Quantities and Units, Engl. Inf. Bull. - I. U. P. A. C., Append. Tentative Nomencl., Symb., Units, Stand. (1972), 21 24 pp. CODEN: IUIAAW Journal written in English. CAN 82:121259 AN

1975:121259
Abstract
Recommendations from IUPAC and the International Federation of Clinical Chemistry for the definition and use of quantities and units in clinical chemistry

- International recommendation for nomenclature of quantities and units in *clinical chemistry*. Dybkaer, Rene. Inst. Med. Microbiol., Univ. Copenhagen, Copenhagen, Den. Amer. J. Clin. Pathol. (1969), 52(6), 637-43. CODEN: AJCPAI Journal; General Review written in English. CAN 72:75402 AN 1970:75402
  Abstract
  Definitions and details of the following items (incorporated in "Recommendation 1966" accepted by IUPAC Section on Clinical Chemistry in 1967 at Prague) are described: quantity (individual properties), system, component, kind of quantity, numerical value, unit, derived kinds of quantities and derived units, factors for units, individual quantities and their units, proposals for new kinds of quantities and abbreviations for quantity names. Comments of different committees are included.

- Glossary of terms used in *nuclear analytical chemistry*. International Union of Pure and Applied Chemistry, Comm. Anal. Radiochem. Nucl. Mater., Anal. Chem. Div., UK. Pure Appl. Chem. (1982), 54(8), 1533-54. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 97:173974 AN 1982:573974
  Abstract
  A IUPAC glossary of radiochemistry analytical terms.

- Glossary of terms used in *physical organic chemistry*. IUPAC Commission on Physical Organic Chemistry, UK. Pure Appl. Chem. (1983), 55(8), 1281-371. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 99:104458 AN 1983:504458
  Abstract
  A glossary with 64 references.

2.3 Specific topics

- Acronyms and initialisms in *analytical methods and instrumentation*. Richter, J. Inst. Transuranium Elements, Comm. Eur. Communities, Karlsruhe, Germany. Comm. Eur. Communities, [Rep.] EUR (1991), (EUR 13571), 65 pp. CODEN: CECED9 ISSN: 0303-755X. Report; General Review written in English. CAN 116:74939 AN 1992:74939
  Abstract
  A review with many references. This document records in alphabetic order abbreviations (acronyms, initialisms, and other condensed forms) of analytical methods and instrumentation. Furthermore a list of abbreviations of detectors and electronics have been included at the end. It is intended to help scientists and the growing number of online searchers to retrieve information esp. in the area of analytical chemistry A few tips concerning online searches in the databases are given in annex. Some of the basic recommendations of IUPAC have been included in the explanatory notes as well as definitions of the different abbreviation forms.

- *Chemical sensors*. Definitions and classification. IUPAC Commission on General Aspects of Analytical Chemistry, Anal. Chem. Div., IUPAC, Oxford, UK. Pure Appl.

Chem. (1991), 63(9), 1247-50. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 115:125769 AN 1991:525769
Abstract
IUPAC definitions and classification of chemistry sensors are given.

- *Electrochemical biosensors*: recommended definitions and classification. Thevenot, Daniel R.; Toth, Klara; Durst, Richard A.; Wilson, George S. Centre d'Enseignement et de Recherche sur l'Eau, la Ville et l'Environnement (Cereve), Faculte de Sciences et de Technologie, Universite Paris XII-Val de Marne, Paris, Fr. Biosensors & Bioelectronics (2001), 16(1-2), 121-131. CODEN: BBIOE4 ISSN: 0956-5663. Journal; General Review written in English. CAN 134:292212 AN 2001:208841
  Abstract
  A review with many references. Two Divisions of the International Union of Pure and Applied Chem. (IUPAC), namely Phys. Chem. (Commission I.7 on Biophys. Chem. formerly steering Committee on Biophys. Chem.) and Anal. Chem. (Commission V.5 on Electroanal. Chem.) have prepared recommendations on the definition, classification and nomenclature related to electro chemistry biosensors; these recommendations could, in the future, be extended to other types of biosensors. As electro chemistry biosensor is a self-contained integrated device, which is capable of providing specific quantitative or semi-quantitative analytical information using a biological recognition element (biochemistry receptor) which is retained in direct spatial contact with an electrochemistry transduction element. Because of their ability to be repeatedly calibrated, we recommend that a biosensor should be clearly distinguished from a bioanalytical system, which requires additional processing steps, such as reagent addition. A device that is both disposable after one measurement, i.e. single use, and unable to monitor the analyte concentration continuously or after rapid and reproducible regeneration, should be designated a single use biosensor. Biosensors may be classified according to the biological specificity-conferring mechanism or, alternatively, to the mode of physico-chemistry signal transduction. The biological recognition element may be based on a chemistry reaction catalyzed by, or on an equilibrium reaction with macromolecules that have been isolated, engineered or present in their original biological environment. In the latter cases, equilibrium is generally reached and there is no further, if any, net consumption of analyte(s) by the immobilized biocomplexing agent incorporated into the sensor. Biosensors may be further classified according to the analytes or reactions that they monitor: direct monitoring of analyte concentration or of reactions producing or consuming such analytes; alternatively, an indirect monitoring of inhibitor or activator of the biological recognition element (biochemistry receptor) may be achieved. A rapid proliferation of biosensors and their diversity has led to a lack of rigor in defining their performance criteria. Although each biosensor can only truly be evaluated for a particular application, it is still useful to examine how standard protocols for performance criteria may be defined in accordance with standard IUPAC protocols or definitions. These criteria are recommended for authors, referees and educators and include calibration characteristics (sensitivity, operational and linear concentration range, detection and quantitative detection limits), selectivity, steady-state and transient response times, sample throughput, reproducibility, stability and lifetime.

- *Electrochemical sensors* in comparison with current analytical methods. Cammann, K.; Sander, J.; Kleinboehmer, W. Inst. Chemo- Biosensorik, Muenster, Germany. DECHEMA Monogr. (1992), 126(Elektrochem. Sens.: Neues Forsch. Anwend.), 33-

50. CODEN: DMDGAG ISSN: 0070-315X. Journal; General Review written in German. CAN 118:138696 AN 1993:138696
Abstract
A review with 8 references. The latest suggestions for IUPAC definitions and classifications for chemical sensors are made. After critical considerations of selectivity improvements by microsensor arrays this paper presents some examples for various electrochemistry sensors including biosensors. Fast chromatographic methods e.g. chromatography with supercritical fluids, ion chromatography and especially. capillary electrophoresis are the most important competitors for chemical sensors. These methods show high selectivity and low interferences. As shown in this paper the separation and quantification of complex mixtures is possible within a few minutes only.

- What is a perfect *gas mixture*? Le Vent, S. Department of Chemistry, University of Manchester, Manchester, UK. Foundations of Chemistry (2001), 3(3), 227-239. CODEN: FOCHFL ISSN: 1386-4238. Journal written in English. CAN 136:150693 AN 2002:21463
  Abstract
  The author presents a summary of the properties of a perfect gas mixture and of essential components of its definition. The definition of a perfect gas mixture varies substantially within the chemistry textbook literature. A recent International Union of Pure and Applied Chem. (IUPAC) definition is criticized as being insufficient to cover properties traditionally associated with such mixtures. Possible supplements to the definition to rectify the deficiency are considered. An alternative definition in mol. terms is shown to be comprehensive.

- Basic classification and definitions of *polymerization reactions*. Mita, I.; Stepto, R. F. T.; Suter, U. W. Japan. Pure Appl. Chem. (1994), 66(12), 2483-6. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 122:56680 AN 1995:284799
  Abstract
  The present document defines basically four categories of polymerisation - chain polymerisation, condensative chain polymerisation, polycondensation and polyaddition - which cover unambiguously all presently known types of polymerisation. The definitions also allow further qualification if desired e.g. cationic chain polymerisation. The present definitions are in accord with the recommended IUPAC Glossary of Terms for Phys. Org. Chem. (1983) and the IUPAC Basic Definitions of Terms Relating to Polymers (1974).

- Terms and definitions in *ultraviolet disinfection* Bolton, James R. International Ultraviolet Association, Ayr, ON, Can. Disinfect. 2000, Disinfect. Wastes New Millennium (2000), 1-16. Publisher: Water Environment Federation, Alexandria, Va CODEN: 69BQU8 Conference; General Review written in English. CAN 135:293429 AN 2001:592773
  Abstract
  A review with 13 references. A series of recommended terms and definitions for use in UV disinfection are summarized. These terms and definitions were harmonized with the IUPAC and SI system of nomenclature. This paper was excerpted from a Draft Report of the International Union of Pure and Applied Chem. (IUPAC) Working Party on UV Disinfection. The members of that Working Party are: James Bolton (Canada), Chairman; Ernest R. Blatchley III (USA), William Cairns (Canada); Oluf Hoyer

(Germany), Karl Linden (USA): Ronald Rahn (USA); Regina Sommer (Austria); Elliott Whitby (Canada). The Working Party invites comments on these recommendations, which should be sent to the attention of the author.

2.4 Limit of detection

- IUPAC recommendations for defining and measuring detection of quantification limits. Currie, L. A.; Horwitz, W. Chem. Sci. Technol. Lab., Natl. Inst. Standards Technol., Gaithersburg, MD, USA. Analusis (1994), 22(5), m24-m26. CODEN: ANLSCY ISSN: 0365-4877. Journal written in English. CAN 121:147799 AN 1994:547799
  Abstract
  For many years, the international chemistry community has recognized the importance of defining objective criteria for. (1) judging whether an experimental outcome indicates presence or absence of an analyte; and (2) defining the inherent detection and quantification capabilities of a chemical measurement process (CMP). IUPAC nomenclature and reporting of analytical results are discussed.

- Recommendations for the definition, estimation, and use of the detection limit. Royal Society of Chemistry, Piccadilly/London, UK. Analyst (London) (1987), 112(2), 199-204. CODEN: ANALAO ISSN: 0003-2654. Journal written in English. CAN 106:112687 AN 1987:112687
  Abstract
  The detection limit is an important concept in trace analysis. However, analysts have been slow to adopt the IUPAC definition of detection limit, and as a consequence there is still a variety of usages in the current literature. The different usages can be reconciled by a proper specification of the analytical system in which the detection limit is measured. Because detection limit cannot be rigorously interpreted in terms of confidence intervals, there is little point in determining it with great precision. Nevertheless, when it is estimated by an appropriate means, it is an invaluable characteristic of an analytical system.

- Limit of detection. A closer look at the IUPAC definition. Long, Gary L.; Winefordner, J. D. Dep. Chem., Univ. Florida, Gainesville, FL, USA. Anal. Chem. (1983), 55(7), 712A-714A, 716A, 718A, 720A, 722A, 724A. CODEN: ANCHAM ISSN: 0003-2700. Journal written in English. CAN 99:15578 AN 1983:415578
  Abstract
  The statistical meaning of detection limit values in trace analysis is examined in a format consistent with the IUPAC definition. Various methods of calculating detection limit values are reviewed.

- A statistical overview of standard (IUPAC and ACS) and new procedures for determining the limits of detection and quantification: application to voltammetric and stripping techniques. Mocak, Jan; Bond, A. M.; Mitchell, S.; Scollary, G. IUPAC Commission on Electroanalytical Chemistry, Anal. Chem. Div., IUPAC, Oxford, UK. Pure Appl. Chem. (1997), 69(2), 297-328. CODEN: PACHAS ISSN: 0033-4545. Journal; General Review written in English. CAN 126:206818 AN 1997:208379
  Abstract
  A review, with 56 references., is given. Traditional methods for determining the limit of detection (LOD) and the limit of quantification Z (LOQ), based on the IUPAC and

ACS definitions, often are unsatisfactory. Consequently, a new simple and statistically correct way of obtaining both the LOD and LOQ values was derived and compared to commonly used methods. The new Upper Limit Approach, ULA, calculates the upper confidence limit of an individual blank signal using a critical value of the t-distribution and standard error of est. (residual standard deviation) of regression. The uncertainty of the calibration plot position, is intercept and the mean blank signal are taken also into consideration. The proper choice of calibration model and calibration design also is discussed. An improved derivation of the signal value relevant to the LOQ is based on the use of the same significance level needed for defining the LOD. The concepts developed in this paper were applied to the determination of cadmium by five common techniques of electrochemistry trace analysis (d.c. tast polarog., differential pulse polarography, linear sweep stripping voltammetry, differential pulse stripping voltammetry, and potentiometric stripping analysis) under equivalent (as possible) conditions. The lowest LOD and LOQ values, obtained by the new reliable ULA method, were 1.0×10^{-9} mol/L and 3.1×10^{-19} mol/L Cd, resp., for differential pulse stripping voltammetry and significance level □ 0.01. The relevant LOD and LOQ values for □ 0.05 are 66 □ 10-10 mol/L and 2 □ 10-9 mol/L Cd, resp. Potentiometric stripping analysis provided similar results.

2.5 Definitions related to pH

- pH theory and measurement. Durst, Richard A.; Koch, William F.; Wu, Yung Chi. Natl. Meas. Lab., Natl. Bur. Stand., Gaithersburg, MD, USA. Ion-Sel. Electrode Rev. (1987), 9(2), 173-96. CODEN: ISRVDR ISSN: 0191-5371. Journal; General Review written in English. CAN 108:197317 AN 1988:197317
  Abstract
  A review with 33 references. Definition of pH, thermodn. foundation of pH, NBS standardization of pH solns., operational detn. of pH and the problem of liq. junction, NBS facilities for pH certification measurements, recommended stds., IUPAC pH scales, and pH instrumentation and electrodes are discussed.

- Definition of pH scales, standard reference values, measurement of pH and related terminology. IUPAC Commission on Electroanalytical Chemistry, UK. Pure Appl. Chem. (1985), 57(3), 531-42. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 102:178195 AN 1985:178195
  Abstract
  This document deals with definitions, procedures, and terminology for the quantity pH which is of wide interest for chemists, biologists and engineers. It is the result of discussions since 1977 within IUPAC and related discussions in other international bodies. It constitutes in the definition of pH scales a compromise which recognizes the advantages of both the previously endorsed multistandard approach and that based on the definition of a single standard with associated operational stds.

- The definition of pH. Proposal of improved IUPAC recommendations. Baucke, Friedrich G. K. Schott Glaswerke, Mainz, Germany. PTB-Ber. W - Phys.-Tech. Bundesanst. (1997), (PTB-W-68), 10-20. CODEN: PAWAD8 ISSN: 0341-6739. Report written in English. CAN 127:283685 AN 1997:672645
  Abstract
  Deficiencies of the existing IUPAC recommendation "Definition of pH Scales, Std. Ref. Values, Measurement of pH and Related Terminol." of 1985 were pointed out.

Basic ideas of improved recommendations were introduced including standardization of practical pH measurements.

3. Documents referring to ISO and/or Eurachem

- A glossary of terms and definitions used in analytical chemistry. Potts, Philip J. Dep. Earth Scis., Open Univ., Milton Keynes, UK. Geostand. Newsl. (1997), 21(1), 157-161. CODEN: GENEE7 ISSN: 0150-5505. Journal; General Review written in English. CAN 127:271790 AN 1997:612430
  Abstract
  A review with 12 references. Definitions of common terms used in analytical chemistry are listed. Most have international approval through the International Organization for Standardization. Others are terms that have not yet received formal ISO approval, but have wide international support.

- Measurement uncertainty in analytical chemistry. Williams, Alex. Mytchett, Camberley/Surrey, UK. Accredit. Qual. Assur. (1996), 1(1), 14-17. CODEN: AQASF3 ISSN: 0949-1775. Journal written in English. CAN 125:157056 AN 1996:489715
  Abstract
  It is now becoming recognized in the measurement community that as well as reporting the measured value it is also essential to give its uncertainty. Without a knowledge of the uncertainty, it is impossible for the users of the result to know what confidence can be placed in it and it is also impossible to assess the comparability of different measurements of the same parameter. However, problems arise using such terminology as error, accuracy, inaccuracy and uncertainty that has everyday connotations as well as formal definitions for use in metrology. The paper gives a resume of the reasons why it is important to evaluate and report the uncertainty on a result in a consistent manner. A description is given of the concept of uncertainty, which highlights the difference between it and error, accuracy or inaccuracy. This is followed by a discussion of the recommendations made by the ISO - Guide to the Expression of Uncertainty in Measurement for the evaluation and reporting of uncertainty. The methodol. for evaluating uncertainty is described and the advantages of using suitable ref. materials are discussed. Finally, the benefits to both the analytical lab. and the user of the results from the evaluation and reporting of uncertainty are considered.

- Proficiency testing in analytical chemistry, microbiology, and laboratory medicine - working group discussions on current status, problems, and future directions. Ornemark, Ulf; Boley, Nick; Saeed, Khalid; van Berkel, Petronella M.; Schmidt, Rainer; Noble, Michael; Makinen, Irma; Keinanen, Mauri; Uldall, Adam; Steensland, Heidi; Van der Veen, Adriaan; Tholen, Daniel W.; Golze, Manfred; Christensen, Jytte Molin; De Bievre, Paul; De Leer, Ed W. B. Bor as, Swed. Accredit. Qual. Assur. (2001), 6(4-5), 140-146. CODEN: AQASF3 ISSN: 0949-1775. Journal; General Review written in English. CAN 135:121814 AN 2001:394778
  Abstract
  A review with 9 references. working group (WG) discussions on proficiency testing (PT) held at the joint Eurachem/EQALM workshop, Boras, Sweden, 24-26 Sept. 2000 are summarized. The discussions focused on aspects of PT and accreditation (WG 1),

general aspects of PT in analytical chemistry (WG 2), microbiol. (WG 3), and lab. medicine (WG 4), incorporation of measurement uncertainty into PT schemes (WG 5), international harmonization of PT schemes (WG 6), and the role of PT in the international structure of chemical measurement (WG 7). Current status, problems and future directions are identified. Each WG contained a majority of participants experienced in the subject being covered by that WG, and a few participants with different expertise. This was done to promote cross-fertilization of ideas between sectors, a key objective of the workshop. The WG issues reflected the content of the keynote lectures and some issues were covered from different perspectives by more than one group.

- Quantifying uncertainty in analytical measurement: The new Eurachem/CITAC Guide. Vetter, Thomas. Analytical Chemistry Division, NIST, Gaithersburg, MD, USA. Abstr. Pap. - Am. Chem. Soc. (2000), 220th ANYL-173. CODEN: ACSRAL ISSN: 0065-7727. Journal; Meeting Abstract written in English. AN 2000:793538
  Abstract
  The Eurachem/CITAC Guide "Quantifying Uncertainty in Analytical Measurement" is an interpretive guide to the ISO document "Guide to the Expression of Uncertainty in Measurement," commonly referred to as "GUM." The Eurachem/CITAC guide has been explicitly written as a practical guide for the analytical chemist. It includes extensive discussion of the use of existing data from method validation, proficiency testing, collaborative studies, and historical data for the quantification of uncertainty components. Detailed examples of uncertainty budgets for problems in analytical chemistry are used to illustrate the concepts. This paper will present the 2nd edition of the guide, in voting draft form at the time of abstract submission, and will promote it as a tool for analytical chemistry

- Metrology in chemistry: Part II. Future requirements in Europe. King, Bernard. Analytical Measurement Consultant, Teddington, UK. Accredit. Qual. Assur. (2000), 5(7), 266-271. CODEN: AQASF3 ISSN: 0949-1775. Journal written in English. CAN 133:254455 AN 2000:603915
  Abstract
  The paper (Parts I and II) reports the results of a survey carried out to assess the current situation in the field of metrology in chemistry within Europe and to identify future needs for work at the European level. Responses to a questionnaire covering 17 economic sectors and distributed to 17 countries plus the European Commission Joint Research Center (EC JRC), together with input from a project group, EURACHEM and EUROMET, provided the basis of the study. Part I covers the protocol for the study and reports current activities. Part II reports suggestions for future work, a strategy for metrology in chemistry and recommendations for the EC Fifth Framework Program.

- Evaluating uncertainty in routine analysis. Maroto, Alicia; Boque, Ricard; Riu, Jordi; Rius, F. Xavier. Department of Analytical and Organic Chemistry, Rovira i Virgili University, Tarragona, Spain. TrAC, Trends Anal. Chem. (1999), 18(9+10), 577-584. CODEN: TTAEDJ ISSN: 0165-9936. Journal; General Review written in English. CAN 131:266311 AN 1999:654455
  Abstract
  A review with 15 references. The authors critically describe the different approaches proposed so far for calculating uncertainty in chemical measurements: (1) the ISO

approach, adapted for the analytical field by EURACHEM (commonly known as bottom-up), and (2) the Anal. Methods Committee approach (commonly known as top-down), based on interlab. information. The authors also propose a new procedure, which is totally consistent with the ISO approach in the sense that all the sources of error are identified, quantified and combined, but which is conceptually more similar to the top-down approach because of its holistic character. This new procedure estimates uncertainty from the information generated during the process of assessing accuracy.

- Validation and quality control schemes based on the expression of results with uncertainty. Bettencourt da Silva, Ricardo J. N.; Camoes, M. Filomena G. F. C.; Seabra e Barros, Joao. CECUL, Faculdade de Ciencias da Universidade de Lisboa, Lisbon, Port. Anal. Chim. Acta (1999), 393(1-3), 167-175. CODEN: ACACAM ISSN: 0003-2670. Journal written in English. CAN 131:242144 AN 1999:438159
  Abstract
  The bottom-up approach for expression of results with uncertainty requires validation and quality control in agreement with the principles established in the Eurachem Guide, the chemistry version of the ISO Guide. These aim at the normalization of the application of well-known metrology principles such as random error propagation laws. This work presents a validation scheme which evaluates the uncertainty estimation process and uses that tool to test accuracy. The routine work of quality control is based on the comparison of obtained confidence intervals for control standards with expected values, instead of using control charts that enhance the dispersion of experimental results. The present approach is also suitable for non-routine work because of its independence in relation to previous data and is applied to the determination of manganese by electrothermal at. absorption spectrometry, of zinc by flame atomic absorption spectrometry and of sodium by flame at. emission spectrometry, in lettuce leaves digested with nitric acid in a microwave irradiated closed system. Although the presented methods had different precisions they were considered valid after the application of the presented scheme.

- Quality assurance good practice for research and development and non-routine analysis. Holcombe, David G.; Neidhart, Bernd; Radvila, Peter; Steck, Werner; Wegscheider, Wolfhard. LGC, Teddington/Middlesex, UK. Anal. Chim. Acta (1999), 393(1-3), 157-165. CODEN: ACACAM ISSN: 0003-2670. Journal written in English. CAN 131:124551 AN 1999:438158
  Abstract
  The application of quality assurance to routine analytical testing is fairly well established with widespread availability of general and specific guidance, both on general principles and in support of quality standards and accreditation/certification schemes. The application to non-routine work is less straightforward and widely available guidance has only recently become available with the development and publication of the EURACHEM/CITAC Guide Quality Assurance Good Practice for Research and Development and Non-routine Anal. A workshop on the guide, and the issues which it aims to address was held during the EUROAnal. 10 Conference, Basel, Switzerland, 6-11 Sept. 1998. This paper presents a summary of the presentations and discussions from that workshop. In addition to introducing the guide the workshop examined the possibilities of formal quality systems for research and development, aspects of quality assurance in the academic world, and various tech. elements of quality assurance. The paper concludes with findings from group discussions on these

topics.

- Experimental Comparison of the Different Approaches To Estimate LOD and LOQ of an HPLC Method. Vial, Jerome; Jardy, Alain. Laboratoire Environnement et Chimie Analytique CNRS, Ecole Superieure de Physique et Chimie Industrielles de la Ville de Paris, Paris, Fr. Anal. Chem. (1999), 71(14), 2672-2677. CODEN: ANCHAM ISSN: 0003-2700. Journal written in English. CAN 131:67269 AN 1999:366099
  Abstract
  Detection and quantification limits (LOD and LOQ) are two fundamental elements of method validation. Rigorous statistical definitions exist, but in HPLC they could not be implemented. Nevertheless there are several estimation methods for these limits. The most commonly used is the signal-to-noise ratio criterion. Others are based on the dispersion characteristics of the regression line, either simple or weighted. For LOQ, Eurachem proposed an alternate approach based on the use of a target value for the area relative standard deviation. Since official guidelines imposed no particular modus operandi, an experimental methodology was set up to study the compatibility of the different approaches and their respective reliabilities. Several samples prepared in a concentration range close to the limits were analyzed. It appeared that, both for values and their reliabilities, the different approaches were far from equiv. In the authors' opinion, the best way to handle the problem of detection and quantification limits was a methodology based on the use of the residual standard deviation of a weighted regression for LOD and on a Eurachem approach for LOQ. Values obtained by these means had the advantage of being reliable, i.e., with a small dispersion, and were still compatible with those obtained with the usual signal-to-noise ratio approach.

- Quantifying uncertainty in sampling and analytical measurement. wegscheider, Wolfhard; Zeiler, Hans-Jurgen; Heindl, Roland; Mosser, Jakob. Institute for General and Analytical Chemistry, University of Leoben, LEOBEN, Austria. Ann. Chim. (Rome) (1997), 87(3-4), 273-283. CODEN: ANCRAI ISSN: 0003-4592. Journal written in English. CAN 126:350826 AN 1997:228793
  Abstract
  Many of the provisions of ISO Guide 25 and EN 45001 were implemented in Europe's analytical labs. particularly in those that were granted accreditation. One element missing so far on the way to well characterized analytical results is measurement uncertainty. This contribution reviews progress made in analytical chemistry particularly lead by the EURACHEM working group charged with the task of advancing approaches and procedures regarding the tech. feasibility and proliferation of the related know-how to the practicing labs. A worked example is given for the detn. of the degree of hydration of mineral raw products. Regarding the uncertainty in sampling several contributions are enumerated whose importance has to be judged by the analyst on a one by one case.

- A framework for the application and materials in analytical chemistry. Nederland, Eurachem; Van Der Veen, A. M. H.; Alink, A.; Verkuil, D.; Van Der Lecq, B. Nederlands Meetinstitut, Delft, Neth. Accredit. Qual. Assur. (1996), 1(5), 207-212. CODEN: AQASF3 ISSN: 0949-1775. Journal; General Review written in English. CAN 126:83809 AN 1997:28529
  Abstract
  A review, with 9 references, is given on a framework for the implementation of ref. materials in analytical chemistry which was developed by Working Group 5 of

EuraChem Nederland. The framework is proposed as a tool for the development of standard operation procedures (SOPs) in labs. The implementation of (certified) ref. materials in these SOPs is of major importance in establishing comparability and traceability in measurement results, which in turn play a crucial role in measurement in support of trade, environmental issues, and characterization of materials. Recent developments in the field of uncertainty analysis require the application of ref. materials. It is recognized that the calculation of the combined measurement uncertainty becomes almost impossible without the use of certified ref. materials with a stated uncertainty.

- Quantifying the measurement uncertainty of results from environmental analytical methods. Moser J; Wegscheider W; Sperka-Gottlieb C Institute for General and Analytical Chemistry, University of Leoben, Austria FRESENIUS JOURNAL OF ANALYTICAL CHEMISTRY (2001 Jul), 370(6), 679-89. Journal code: DVT. ISSN:0937-0633. Journal; Article; (JOURNAL ARTICLE) written in English. DN 21399191 PubMed ID 11508456 AN 2001463493 MEDLINE (Copyright 2002 U.S. National Library of Medicine)
  Abstract
  The Eurachem-CITAC Guide Quantifying Uncertainty in Analytical Measurement was put into practice in a public laboratory devoted to environmental analytical measurements. In doing so due regard was given to the provisions of ISO 17025 and an attempt was made to base the entire estimation of measurement uncertainty on available data from the literature or from previously performed validation studies. Most environmental analytical procedures laid down in national or international standards are the result of cooperative efforts and put into effect as part of a compromise between all parties involved, public and private, that also encompasses environmental standards and statutory limits. Central to many procedures is the focus on the measurement of environmental effects rather than on individual chemical species. In this situation it is particularly important to understand the measurement process well enough to produce a realistic uncertainty statement. Environmental analytical methods will be examined as far as necessary, but reference will also be made to analytical methods in general and to physical measurement methods where appropriate. This paper describes ways and means of quantifying uncertainty for frequently practised methods of environmental analysis. It will be shown that operationally defined measurands are no obstacle to the estimation process as described in the Eurachem/CITAC Guide if it is accepted that the dominating component of uncertainty comes from the actual practice of the method as a reproducibility standard deviation.

4. "Glossary" documents

4.1 Various branches of "chemistry"

- A glossary of terms and definitions used in *analytical* chemistry. Potts, Philip J. Dep. Earth Scis., Open Univ., Milton Keynes, UK. Geostand. Newsl. (1997), 21(1), 157-161. CODEN: GENEE7 ISSN: 0150-5505. Journal; General Review written in English. CAN 127:271790 AN 1997:612430
  Abstract
  A review with 12 references. Definitions of common terms used in analytical chemistry are listed. Most have international approval through the International

Organization for Standardization. Others are terms that have not yet received formal ISO approval, but have wide international support.

- Glossary of *bioanalytical* nomenclature. Part 1: General terminology, body fluids, enzymology, immunology. Burtis, Carl A.; Geary, T. D. Chem. Technology Div., Oak Ridge Natl. Lab., Oak Ridge, TN, USA. Pure Appl. Chem. (1994), 66(12), 2587-604. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 122:50695 AN 1995:284806
  Abstract
  Many disciplines are involved in the practice of clinical lab. medicine, with each having its own set of tech. terminology Consequently, the terminology used in the clinical lab. is often vague, inexact, and, in some cases, even in discord with conventional and officially approved terminology To help rectify this situation, a general set of bioanalytical definitions has been compiled and collated from documents from several national and international organizations with the emphasis on those prepared by the International Federation of Clin. Chem. (IFCC), the International Union of Pure and Applied Chem. (IUPAC), and the International Union of Biochem. (IUB). References are included for each definition included. This document includes sections on General Terminol., Body Fluids, Enzymol., and Immunol. Other topics will be included in subsequent documents. It is hoped that this set of bioanalytical definitions will be useful to the practitioners of clinical chemistry and will foster improved communication and understanding among them.

- Glossary of terms used in *bioinorganic* chemistry. De Bolster, M. W. G. Vakgroep Organische Anorganische Chemie, Fac. Scheikunde, Vrije Univ., Amsterdam, Neth. Pure Appl. Chem. (1997), 69(6), 1251-1303. CODEN: PACHAS ISSN: 0033-4545. Journal; General Review written in English. CAN 127:216397 AN 1997:497445

- Glossary of *Chemical Terms*. 2nd Ed. Hampel, Clifford A.; Howley, Gessner G. USA. (1982), 304 pp. Publisher: (Van Nostrand Reinhold, New York, N. Y.) $19.95. Book written in English. CAN 96:180213 AN 1982:
  Abstract
  A review with 21 references. The glossary contains definitions and (where needed) explanatory notes for about 400 terms used in the multidisciplinary field of bioinorganic chemistry A need has been recognized for globally acceptable definitions of terms in this field and this glossary was compiled with the objective of fulfilling this need. It is by no means a comprehensive dictionary. The terms selected were those considered essential and/or widely used. The definitions given reflect current usage and complement IUPAC guidelines. Abbreviations and acronyms, frequently used in bioinorganic chemistry, are included.

- Glossary of terms in quantities and units in *clinical* chemistry. Leehmann, H. P.; Fuentes-Arderiu, X.; Bertello, L., F. IUPAC Commission on Qualities and Units in Clinical Chemistry, Clin. Chem. Div., IUPAC, Oxford, UK. Pure Appl. Chem. (1996), 68(4), 957-1000. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 125:51919 AN 1996:378184
  Abstract
  From 1967 onwards, a number of documents prepared by the IUPAC/C-QUCC and IFCC/C-QU (from 1996-01-01 C-NPU), with input from many clinical lab. scientists worldwide, and consistent with standards promulgated by authoritative international

scientific organizations, have been published. Because of the importance of a consistent terminology in clinical chemistry and because these documents are often published in journals that may not be readily accessible, the C-NPU has prepared a glossary containing those terms considered of particular interest to the clinical chemistry and clinical lab. science communities. The glossary has been complied from definitions taken from published documents of the C-NPU. Also it contains a number of terms, and their definitions, considered relevant to the practice of clinical chemistry, taken from the official documents of other commissions of IUPAC and of international scientific organizations such as the International Organization for Standardization, the International Bureau of Wts. and Measures and the International Union of Biochem. and Mol. Biol.

- Glossary of *Clinical* Chemistry Terms. Haisman, P.; Muller, B. R. Engl. (1974), 133 pp. Publisher: (Butterworth, London, Engl.) Book written in English. CAN 83:4379 AN 1975:404379

- Glossary of terms used in *combinatorial* chemistry. Anon. J. Comb. Chem. (2000), 2(6), 562-578. CODEN: JCCHFF ISSN: 1520-4766. Journal; Miscellaneous written in English. AN 2000:819583 CAPLUS

- Glossary of terms used in *medicinal* chemistry (IUPAC recommendations 1998). Wermuth, C. G.; Ganellin, C. R.; Lindberg, P.; Mitscher, L. A. Faculte de Pharmacie, Universite louis Pasteur, Strasbourg, Fr. Pure Appl. Chem. (1998), 70(5), 1129-1143. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 129:225674 AN 1998:497210
  Abstract
  The objective of the glossary is to provide in a single document a consistent terminology and concise definitions of terms covering the various aspects of medicinal chemistry This was felt necessary with regard to the rapid changes occurring in medicinal chemistry and also by the need to establish international definition standards. Effectively the possibility exists that in different countries certain terms may not have the same meaning, in such a case the creation of an internationally accepted definition is particularly justified. A Working Party belonging to the IUPAC Section on Medicinal Chemistry has therefore bean assembled which prepared the present glossary. Concise but sufficiently explanatory definitions have been formulated for about one hundred commonly employed terms which can be considered of particular interest to the medicinal chemistry community. The glossary has been compiled in part from definitions proposed by the Working Party in part from earlier IUPAC glossaries and in part from well-accepted definitions taken from the literature but which were sometimes published in journals or books that may not be readily accessible.

- Nomenclature for *radioanalytical* chemistry. Van Grieken, R.; De Bruin, M. Dep. Chem., Univ. Antwerp, Answerp, Belg. Pure Appl. Chem. (1994), 66(12), 2513-26. CODEN: PACHAS ISSN: 0033-4545. Journal; General Review written in English. CAN 122:121927 AN 1995:284803
  Abstract
  A review, with 1 ref., is given. Nearly 200 terms commonly used in radioanalytical chemistry are unambiguously defined. The list is partially based on an earlier IUPAC-glossary (Pure Appl Chem. 54(1982) 1533-1554), but some modifications were made,

terms related to nuclear physics and technology were not reconsidered and numerous new entries from the realm of radiometric analysis, RIA and related techniques were included.

- Basic terminology of *stereochemistry*. Moss, G. P. Dep. Chem., Queen Mary Westfield College, London, UK. Pure Appl. Chem. (1996), 68(12), 2193-2222. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 126:157003 AN 1997:82189
  Abstract
  This is a glossary of the more important, and most widely used stereochemistry terms. It extends the list of those defined in the IUPAC Nomenclature of Org. Chem., Section E: Stereochem. (Recommendations 1974) and includes some terms from the Glossary of Terms used in Phys. Org. Chem. (Recommendations 1994). Additional terms have been added from inorganic and macromolecular chemistry. Some misleading terms are included together with guidance on correct usage or acceptable alternatives. Many of the symbols used in stereochemistry nomenclature are mentioned but details of their assignment or their incorporation into chemistry names are left to the appropriate recommendations. Terminology related to techniques used in the determination of stereochemistry are largely excluded as well as terms used to describe reaction mechanisms.

4.2 Various techniques or areas

- Glossary of terminology used in *catalysis*. Falconer, John L. Department Chemical Engineering, University Colorado, Boulder, CO, USA. Editor(s): Anderson, John R.; Boudart, Michel. Catal.: Sci. Technol. (1996), 10 177-209. Publisher: Springer, 1981-, Berlin, Germany CODEN: 46HUAL Conference; General Review written in English. CAN 125:19954 AN 1996:342943
  Abstract
  A review with 25 references.; the interdisciplinary nature of heterogeneous catalysis creates the need for a glossary to make access to the literature easier by defining most of the terms frequently used in catalytic science and technology. In addition, the glossary should contain a brief description of experimental techniques commonly used in catalysis and the type of information obtained from them. Some terms have more than one definition, but this glossary presents only the definitions related to heterogeneous catalysis, although some of them apply to other forms of catalysis. The terms and their definitions correspond as closely as possible to literature usage, which sometimes differs from preferred usage. The definitions are based on the Manual of Symbols and Terminol.: Heterogeneous Catalysis, the McGraw-Hill Dictionary of Scientific and Tech. Terms, books on kinetics, heterogeneous catalysis, surface physics, and reactor design, and chemistry dictionaries. Some definitions are from the vols. of Catalysis: Science and Technol. Trademarks have been omitted.

- Glossary of terms used in *computational drug design*. Van de Waterbeemd, H.; Carter, R. E.; Grassy, G.; Kubinyi, H.; Martin, Y. C.; Tute, M. S.; Willett, P. Chem. Human Health Div., Med. Chem. Sect., IUPAC, Oxford, UK. Pure Appl. Chem. (1997), 69(5), 1137-1152. CODEN: PACHAS ISSN: 0033-4545. Journal; General Review written in English. CAN 127:170890 AN 1997:471104
  Abstract
  A review with 41 references. Computational drug design is a rapidly growing field

which is now a very important component in the discipline of medicinal chemistry. At the same time many medicinal chemist lack significant formal training in this field and may not have a clear understanding of some of the terminology used but need to grasp concepts, follow research results, define problems for, and utilize findings of, computational drug design. In this context the IUPAC Medicinal Chem. Section Committee felt it would be useful to develop a glossary of terms used in computational drug design for easy ref. purposes. Also there is the possibility that in different countries certain terms may not have the same meaning and in such a case there would be value in trying to establish an international definition standard Accordingly a Working Party of seven experts in the field was assembled who constructed a glossary of some 100 terms. Concise but sufficiently explanatory definitions have been formulated based on a variety of literature sources and selected key references provided.

- Physical, chemical, and biological characteristics of *estuaries*. Abbott, Walter; Dawson, C. E.; Oppenheimer, C. H. Gulf Coast Res. Lab., Ocean Springs, Miss., USA. Editor(s): Ciaccio, Leonard L. water Water Pollut. Handb. (1971), 1 51-140. Publisher: Dekker, New York, N. Y CODEN: 23JLAT Conference; General Review written in English. CAN 75:52596 AN 1971:452596
  Abstract
  A review, with 299 references and a glossary of specialized terms, which discusses estuaries with respect to: characteristics; formation; circulation and mixing in relation to tides; gas exchange with the atmosphere; deposition of sediments; salinity, ion composition and organic matter; macrofauna, macroflora, plankton, bacteria and productivity; effect of environmental changes; pollution.

- *Expert system applications* in chemistry. Hohne, Bruce A.; Pierce, Thomas H. Rohm and Haas Co., Spring House, PA, USA. ACS Symp. Ser. (1989), 408(Expert Syst. Appl. Chem.), 2-9. CODEN: ACSMC8 ISSN: 0097-6156. Journal written in English. CAN 111:193739 AN 1989:593739
  Abstract
  A brief overview is given of expert systems for chemistry applications. Because artificial intelligence has developed its own vocabulary, a short glossary is included.

- The *Fourier transform in chemistry-NMR*: a glossary of NMR terms. King, Roy W.; Williams, Kathryn R. Univ. Florida, Gainesville, FL, USA. J. Chem. Educ. (1990), 67(4), A100-A105. CODEN: JCEDA8 ISSN: 0021-9584. Journal written in English. CAN 113:5267 AN 1990:405267
  Abstract
  A glossary is presented of terms encountered in the application of Fourier transform in NMR.

- Glossary of *liquid-phase separation* terms. Majors, Ronald E. USA. LCGC North America (2001), 19(2), 124, 126, 128, 130, 132, 134-138, 140, 142, 144, 146, 148, 150, 152-156, 158, 160, 162. CODEN: LNACBH ISSN: 1527-5949. Journal; General Review written in English. CAN 134:216494 AN 2001:142469 CAPLUS
  Abstract
  A review without references. This month's Column Watch column is an extensive glossary of definitions and terms used in the liquid-phase separation techniques of high performance liquid chromatography, capillary electrophoresis, and capillary

electrochromatography. The glossary should be useful to those just starting to use these separation techniques and can serve as a refresher for long-time users. It provides some of the newer nomenclature recommended by the International Union of Pure and Applied Chem.

- Glossary of terms relating to *pesticides*. Holland, Patrick T. IUPAC, Chem. Environ. Div., IUPAC, Oxford, UK. Pure Appl. Chem. (1996), 68(5), 1167-1193. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 125:79386 AN 1996:409337 CAPLUS
  Abstract
  The glossary contains >270 terms frequently used in the chemistry, regulation analysis, environmental fate and toxicology of pesticides.

- Glossary of basic terms in *polymer science*. Jenkins, A. D.; Kratochvil, P.; Stepto, R. F. T.; Suter, U. W. UK. Pure Appl. Chem. (1996), 68(12), 2287-2311. CODEN: PACHAS ISSN: 0033-4545. Journal written in English. CAN 126:118225 AN 1997:82213 CAPLUS
  Abstract
  The clear and unambiguous definition of basic terms in a field of science has special significance. Subsequent nomenclature must refer back to these basic terms, and the utmost care is, therefore, required in preparing and revising them. In 1974, the Commission published a document entitled "Basic Definitions of Terms Relating to Polymers (1974)," that appeared in Pure Appl. Chem. 1974, 40, 479-491. These definitions have been the foundation for the Commission's work and, building on this basis, the Commission has developed a number of further nomenclature documents. The vast majority of terms in the basic document serves its purpose well. Progress in polymer science and the need for new definitions, the proper wording of which would have been incompatible with some of the basic terms, made it increasingly apparent that some change was needed in the basic terms. Approx. twenty years since the publication of the first document, the Commission now issues a revised and enlarged set of basic terms. The new glossary of terms has been formulated by the Commission with the additional input and aid of several well-known researchers and journal editors.