deviations in distribution of molecular weights with different experimental methodologies were broader, but were reasonably good despite the diversity of methods. The differences in the distribution correspond to a confidence interval of about 30% in molecular weight.

www.iupac.org/publications/pac/2004/7611/7611x2009.html

Rheological Properties and Associated Structural Characteristics of Some Aromatic Polycondensates Including Liquid-Crystalline Polyesters and Cellulose Derivatives (IUPAC Technical Report)

J.L. White, L. Dong, P. Han, and M. Laun
Pure and Applied Chemistry
Vol. 76, No. 11, pp. 2027–2049 (2004)

Aromatic polycondensates became increasingly important in the 1980s. Characteristic of these polymers are para-linked aromatic rings in their backbones, which tend to make the chains more rigid than aliphatic hydrocarbon (e.g., vinyl) polymers. While such *p*-linked aromatic polycondensates like poly(carbonate) or poly(ethylene terephthalate) had been known since the 1950s, the full implications were only realized in the 1970s with the discovery that concentrated solutions of poly(*p*-phenylene terephthalamide), poly(*p*-benzamide), and similar polymers exhibited rest state birefringence, liquid-crystalline phases, and associated viscosity reductions. This paper describes a comparative experimental study of shear-flow rheological properties of thermotropic polymer liquid crystals by eight different laboratories. The materials involved four different liquid-crystalline polyesters (LCPs), a glass- fiber-filled liquid-crystalline polyester, hydroxypropyl cellulose (HPC), and two non-liquid-crystalline high-temperature polymers, a poly(etheretherketone) (PEEK), and a polyarylate (PAR). Studies were made in both steady shear-flow and dynamic oscillatory experiments. The data from the various laboratories involved were compared. The level of agreement in the data was much less for most liquid-crystalline polymers than for similar isotropic melts. The Cox-Merz rule is valid for PEEK and PAR, but not for the LCPs and HPC. The occurrence of low levels of extrudate swell and high levels of uniaxial orientation in extrudates of the LCPs and HPC is described.

www.iupac.org/publications/pac/2004/7611/7611x2027.html

Name and Symbol of the Element with Atomic Number 111 (IUPAC Recommendations 2004)

J. Corish and G.M. Rosenblatt
Pure and Applied Chemistry
Vol. 76, No. 12, pp. 2101-2103 (2004)

A joint IUPAC-IUPAP Working Party (JWP) confirmed the discovery of element number 111. In accord with IUPAC procedures, the discoverers proposed a name and symbol for the element. The Inorganic Chemistry Division recommended this proposal for acceptance, and it was adopted by IUPAC on 1 November 2004. The recommended name is **roentgenium** with symbol **Rg**.

www.iupac.org/publications/pac/2004/7612/7612x2101.html

Chemical Actinometry (IUPAC Technical Report)

H.J. Kuhn, S.E. Braslavsky, and R. Schmidt
Pure and Applied Chemistry
Vol. 76, No. 12, pp. 2105-2146 (2004)

This document updates the first version of the IUPAC technical report on “Chemical Actinometers” published in *Pure and Applied Chemistry*, 61, 187–210 (1989). Since then, some methods have been improved, procedures have been modified, and new substances have been proposed as chemical actinometers. An actinometer is a chemical system or a physical device by which the number of photons in a beam absorbed into the defined space of a chemical reactor can be determined integrally or per time. This compilation includes chemical actinometers for the gas, solid, microheterogeneous, and liquid phases, as well as for use with pulsed lasers for the measurement of transient absorbances, including the quantum yield of phototransformation. The literature for each of the actinometers is included as well. The actinometers listed are for use in the wavelength range from UV to the red region of the spectrum. A set of recommended standard procedures is also given. Advantages and disadvantages are discussed regarding the use of chemical actinometers vs. electronic devices for the measurement of the number of photons absorbed. Procedures for the absolute measurement of incident photon flux by means of photodiodes are also discussed.

www.iupac.org/publications/pac/2004/7612/7612x2105.html

Electrochemistry at the Interface between Two Immiscible Electrolyte Solutions
(IUPAC Technical Report)

Z. Samec

Pure and Applied Chemistry

Vol. 76, No. 12, pp. 2147–2180 (2004)

An interface between two immiscible electrolyte solutions (ITIES) is formed between two liquid solvents of a low (ideally zero) mutual miscibility, each containing an electrolyte. One of these solvents is usually water, and the other one is a polar organic solvent of a moderate or high dielectric permittivity, such as nitrobenzene or 1,2-dichloroethane, which allows for at least partial dissociation of dissolved electrolyte(s) into ions. Electrochemical processes at ITIES have attracted a great deal of interest for two reasons. First, the biomimetic features of these processes have been a concern for over a century. Second, the electrochemical reaction at ITIES represents an essential aspect of various practical applications in chemistry, including electroanalysis, phase-transfer catalysis, ion extraction, and electrocatalysis.

This document provides an inventory of theoretical and methodological concepts in electrochemistry at the interface between two ITIES. Definitions of basic relationships are given, together with recommendations for the preferred symbols, terminology, and nomenclature. Methods of study of ITIES are briefly described, current experimental problems are indicated, and representative experimental data are shown. The practical applications of electrochemistry at ITIES are summarized.

www.iupac.org/publications/pac/2004/7612/7612x2147.html

IUPAC *Empfehlungen*

The German National Adhering Organization, the Deutscher Zentralausschuss für Chemie, through one of its component Societies, the Gesellschaft Deutscher Chemiker, has arranged for the translation and publication of selected IUPAC Reports and Recommendations in the journal *Angewandte Chemie*. According to Angewandte Chemie, publishing translations of IUPAC Recommendations and Technical Reports is a way to promote the use of chemical professional language in German. Properly defined terms and clear nomenclature form the basis of the understanding among scientists in a discipline and are essential for the exchange among scientific and professional language and general language. All translations are examined, corrected, and authorized by an acknowledged expert, the "Obmann."

For more information, please contact Elisabeth Weber <angewandte@wiley-vch.de> or visit the journal Web site <www.angewandte.com>. Suggestions for themes and experts are welcomed.

Following is a list of recently translated and published Reports and Recommendations:

- "Modeling Lifetime and Degradability of Organic Compounds in Air, Soil, and Water Systems," A. Sabljic and W. Peijnenburg, *Pure Appl. Chem.* 2001, **73**, 1331–1348
- "Definitions of Basic Terms Relating to Low-Molar-Mass and Polymer Liquid," M. Barón, *Pure Appl. Chem.* 2001, **73**, 845–895
- "Concepts and Applications of the Term Dimensionality in Analytical Chemistry," Klaus Danzer, Jacobus F. van Staden, and Duncan Thorburn Burns, *Pure Appl. Chem.* 2002, **74**, 1479–2002
- "Organic Photochromism," H. Bouas-Laurent and H. Dürr, *Pure Appl. Chem.* 2001, 73, 639–665
- "NMR Nomenclature. Nuclear Spin Properties and Conventions for Chemical Shifts," R. K. Harris, E. D. Becker, S. Cabral de Menezes, R. Goodfellow, and P. Granger, *Pure Appl. Chem.* 2001, **73**, 1795–1818
- "Generic Source-Based Nomenclature for Polymers," E. Maréchal and E. S. Wilks, *Pure Appl. Chem.* 2001, **73**, 1511–1519

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