



[www.iupac.org/divisions/IV/index.html](http://www.iupac.org/divisions/IV/index.html)



Full members Associate Members

The International Union of Pure and Applied Chemistry (IUPAC) is a scientific, international non-governmental and objective body addressing global issues involving chemical sciences. IUPAC, to ensure the timely and effective fulfilment of its role in the international scientific and technical community, has undergone major structural changes over recent years to a project-driven system. IUPAC comprises eight Divisions: Physical, Inorganic,

Organic, **Macromolecular**, Analytical, Chemistry and the Environment, Human Health and Nomenclature. In addition, there are three Operational Standing Committees, concerned with broad issues, namely, Chemical Research Applied to World Needs (CHEMRAWN), Chemistry Education, and Chemistry and Industry. The Macromolecular Division, in addition to managing its own projects, collaborates with these Committees and with the other Divisions.

The activities of the **MACROMOLECULAR DIVISION** include:

### Terminology and Nomenclature

Using the correct and unambiguous names and terms for polymers and their properties is extremely important for general, legal and scientific communication, for patents, etc. The way that polymers and copolymers are presently named originates from the work of the Macromolecular Division and ordinary IUPAC polymer nomenclature is not complex: the correct source-based name for polystyrene is *polystyrene*. The current terminology and nomenclature work is related to modern-day polymers and their properties (e.g. *Definition of Basic Terms Related to Polymer Liquid Crystals, Pure & Applied Chem.*, 2002, **74**, 493). Online versions of the publications on macromolecular terminology and nomenclature can be accessed readily through the **Macromolecular Division Website** (see above).

### Characterization

The Division's projects on the characterization of polymers and processes involve the global collaboration of scientists and technologists from industry, universities and research institutes in tackling a wide range of topics of immediate significance and importance. The resulting publications are widely cited and used. Broadly, the areas of activity are:

**Structure and Properties of Commercial Polymers** (e.g. *Rheology and Morphology of Phase-Separating Polymer Blends, Macromolecules*, 2001, **34**, 1416).

**Molecular Characterization of Commercial Polymers** (e.g. *Band Broadening in Size Exclusion Chromatography of Polymers. State of the Art and Some Novel Solutions, J. Liq. Chrom. & Rel. Technol.*, 2002, **25**, 1967).

**Polymerization Kinetics** (e.g. *Critically Evaluated Rate Coefficients for Free-Radical Polymerization, 3. Propagation Rate Coefficients for Alkyl Methacrylates, Macromol. Chem. Phys.*, 2000, **201**, 1355).

**Developing Polymer Materials Systems** (e.g. *Polyaniline. Preparation of a Conducting Polymer, Pure & Applied Chem.*, 2002, **74**, 857).

## Education

The Macromolecular Division's education projects are pioneering and have a worldwide impact. Their emphasis is to spread polymer education into economically disadvantaged countries. Current and recent examples of education projects are:

**Moscow** – preparation of a distance (web-site) learning course in polymer science.

**South Africa** - school and course on polymer properties (joint with UNESCO).

**Prague** – general postgraduate course in polymer science (joint with UNESCO).

**Denton, USA** - postgraduate course in polymer characterization.

## Conference Sponsorship

IUPAC sponsorship for an **international conference** can be granted on application by conference organizers. The IUPAC “seal of approval” helps to attract registrants and support for a conference. The application form for IUPAC sponsorship, and the criteria to be met, can be found on <http://www.iupac.org/symposia/index.html>. IUPAC can also provide significant funding for conferences in economically-disadvantaged countries that are full IUPAC members.

The **Macromolecular Division** actively encourages the IUPAC sponsorship of macromolecular and polymer conferences. 12 conferences were sponsored in 2002 and a similar number is planned for 2003. Almost all of the conferences result in journal or book publications and, currently, 50% of the volumes of Macromolecular Symposia come from IUPAC-sponsored conferences approved via the Macromolecular Division. Advice on applying for sponsorship can be obtained from Przemyslaw Kubisa ([pkubisa@bilbo.cbmm.lodz.pl](mailto:pkubisa@bilbo.cbmm.lodz.pl)) or Stanislaw Penczek ([spenczek@bilbo.cbmm.lodz.pl](mailto:spenczek@bilbo.cbmm.lodz.pl)).

## Creating an IUPAC project

While IUPAC is not a grant-giving body supporting the complete cost of research projects in the same way as, e.g., the National Science Foundation in the U.S.A., it is able to provide funding to enable projects to be undertaken, often covering the costs of travel, of planning and review discussions, and of publications.

A full list of current **Macromolecular Division** projects can be obtained from the Division Website (see above) and **the Division positively encourages new projects** from all members of the international polymer community. Projects must be of global significance and meet certain criteria. The formal process for setting up an IUPAC project can be found at <http://www.iupac.org/projects/index.html>. It is strongly recommended that those considering projects should first discuss matters with the Division Committee Member responsible for the generic area of the project, or with the Division President, Bob Stepto ([robert.stepto@umist.ac.uk](mailto:robert.stepto@umist.ac.uk)).

The advantages for leading or participating in an IUPAC project include:

- Satisfaction in fulfilling a need for the international community
- International prestige and networking
- Publications with high citation rates
- Funds for travel, e.g. for a project workshop within an international conference.