Books and other publications

New Approaches in Polymer Synthesis

Macromolecular Symposia, Vol. 128, pp. 1–254, March 1998.
Invited lectures presented at the IUPAC International Symposium on New Approaches in Polymer Synthesis and Macromolecular Formation held in St. Petersburg, Russia, 16-20 June, 1997.

Symposium Editors: A. Yu. Bilibin and S.S. Skorokhodov

The International Symposium 'New Approaches in Polymer Synthesis and Macromolecular Formation' was organized by the Institute of Macromolecular Compounds of the Russian Science Academy and the Chemistry Department of Saint-Petersburg State University. It appeared to be a logical continuation of the St. Petersburg Polymer Meetings, well known due to the 1st and 2nd IUPAC Symposia 'Molecular Order and Mobility in Polymers'.

The final programme included 21 plenary lectures. The Symposium was divided into four sections:

A New approaches in chain-and step-growth polymerization
B Catalysis in polymer synthesis
C New macromolecular architecture
D Non-traditional methods of macromolecular formation.

The above division is somewhat arbitrary, reflecting the interconnection and interpenetration of the branches of contemporary polymer chemistry. The present volume includes the texts of 21 plenary and oral lectures.

Modified Polyolefins

Macromolecular Symposia, Vol. 129, pp. 1–172, March 1998.
Invited lectures presented at the 12th Bratislava IUPAC International Conference on Polymers: Modified Polyolefins for Advanced Polymeric Materials held in Bratislava, Slovak Republic, 25-28 August, 1997. Symposium.

Editor: E. Borsig

The aim of the Conference was to bring together scientists from academia and industry to stimulate the exchange of ideas on recent advances in chemistry and physics of modified polyolefins leading to advanced polymeric materials.

More than 120 scientists, from 23 countries of the five continents presented 10 invited lectures, 22 contributed papers and 51 posters.

The Conference covered the two main kinds of effective chemical modification of polyolefins: the catalytic systems in polyolefin production and during polyolefin processing using extruders as reaction vessels. New catalysts tolerating known catalyst poisons such as carbon monoxide in the co-polymerization with ethylene or methyl methacrylate and other vinyl-functional esters can be incorporated into polyethylene. They allow the control of molar mass, end groups, stereochemistry, monomer incorporation and morphology. In addition to isotactic poly(propylene) also syndiotactic, hemiisotactic poly(propylene)s are available in high yields. Polyethylene short-and long-chain-branching is controlled either by uniform ethylene copolymerization with 1-olefins using 'single-site' metallocene catalysts or by migratory polyinsertion of ethylene, respectively.

An alternative variation of the polyolefin structure by catalysts is the preparation of elastomeric poly(propylene), the properties of which are influenced by variation of the length of isotactic and atactic segments.

The incompatibility of polyolefins with other, mainly polar polymers, requires the adjustment of their apolar chains to more polar blend components using peroxide-initiated grafting of acrylic and maleic anhydride derivatives on to polyolefin chains. Many Conference contributions were also devoted to other kinds of functionalization of polyolefins, mainly poly(propylene), which could extend the possibilities of the preparation of entirely new materials, including polymer blends.

New effective methods of grafting of vinyl monomers on to polyolefins, mainly on poly(propylene) were also reported. The grafting of styrene on to poly(propylene) with more than 50% yield in the solid state seems to be very advantageous.

The results obtained in the preparation of polyolefin blends showed that reactively compounded polymer blends have generally better mechanical properties than the blend prepared only by mechanical mixing. It was illustrated in PP rubber blends and also during UHMW-PE spinning with reactive solvents. The presented contributions on interaction between polymer components in polyolefin blends like dispersion forces, the influence of the crystalline part on the miscibility and morphology of the blend, and adhesive properties of modified polyolefins on to metal have a practical importance for the development of the new advanced polyolefin materials.

The Impact of Electronic Publishing on the Academic Community—available online

The Proceedings of the International Workshop organized by Academia Europaea and the Wenner-Gren Foundation which took place in April 1997 is now freely available. Contact: Adam Marshall, Head of Marketing: +44 171 580 5530.

Information Technology affects all aspects of academic activity, whether in research, scholarship or education. A major revolution is taking place on how knowledge is being held and by whom. In the past, the main guardian of knowledge has been the academic community, with its related institutions of universities, libraries, learned societies, scholarly publishers, etc. That responsibility is rapidly being transferred to others, and yet the voice of academia is hardly being heard in this process.

In *The Impact of Electronic Publishing on the Academic Community*, experts from a wide variety of backgrounds discuss the plans for implementing electronic publishing in their specific subject areas. Topics covered include:

- The present situation and the likely future
- Legal and political issues
- The content and quality of academic communication
- Social and cultural issues
- Digital libraries and archiving of electronic information
- Access to scientific data repositories

The online version of this book is fully searchable with links from the text to references and hot links to other web sites and email addresses. There is a complete list of contributors and participants of the Workshop including contact details.

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