

Ionic Polymerization

by *Stanislaw Penczek*

The IUPAC International Symposium on Ionic Polymerization (IP' 01) was held 22-26 October 2001 at the Kreta Maris Hotel in Crete, Greece. The Symposium had the support of IUPAC, the Ministry of Education of Greece, the European Polymer Federation, the Greek Polymer Society, the Greek Chemists Association, and the University of Athens. The sponsors of the Symposium were the Ministry of Education and Religious Affairs, ExxonMobil Research and Engineering Company, USA; ExxonMobil Chemical, European Science and Engineering Programme; BASF; MALVA Ltd-WATERS; Techline S.A.; Agmartin; INTERCHEM; Analytical Equipments/K.Vamvakas; HELLAMCO A.E.; and ASTERIADIS S.A.

Dr. Andrew Lovinger of the National Science Foundation, USA, was the honorary chairman of the Symposium. Professor Nikos Hadjichristidis of the University of Athens was the chairman of IP' 01. Dr. Hermis Iatrou chaired the Local Committee—of which Drs. Marinos Pitsikalis and Stergios Pispas were members—that organized this superb Symposium.

During the Opening Ceremony, Professor R.F.T. Stepto, President Elect of the IUPAC Macromolecular Division presented the role of IUPAC and, more particularly, the recent work of the Macromolecular Division.

The International Symposia on Ionic Polymerizations have a long history. Started in the late 40s/ early 50s by Professors David Pepper of Dublin, Ireland, and Peter Plesch of Keele, Great Britain, the symposia dominated the field of cationic polymerization at that time. Then in 1956, after the discovery of the processes of “living polymerization” by Professor Michael Szwarc, founder and “father” of modern ionic polymerizations, a series of more or less formal meetings were organized in the field of anionic polymerization. Two decades later (in 1975) the first IUPAC Symposium on Ring-Opening Polymerization was organized by this author in Warsaw, Poland. Finally, the concerted efforts of a group of scientists—working in anionic, cationic, and ring-opening polymerisations—converted these separate meetings into a chain of Symposia, unifying all of the fields of ionic polymerizations.

The Crete Symposium was the fourth (after Istanbul, Paris, and Kyoto) of this new series. However, the organizers of the Crete Symposium went even further, rightly adding several lectures on topics related to the living radical polymerizations, metathesis, metal coordination, template and enzymatic polymerizations, polymer physical chemistry, and the physics of materials made by these processes, and by doing so, created a scientific program of outstanding quality.

There were over 240 active participants from 30 countries at the Symposium. In total, 68 invited lectures,

29 oral lectures, and 91 posters were presented. All of the research centers contributing to the synthesis of macromolecules with well-controlled structures were represented at this Symposium. The presenters comprehensively described the methods of preparation of miscellaneous block and graft copolymers, including the miktoarms star-shaped macromolecules, originally developed in Professor Hadjichristidis' laboratories. Several groups of physicists discussed morphologies of these and related polymers, showing sophisticated structures in which complicated geometrical structures of or two polymers are imbedded in the matrix of another polymer. Several of these materials of the future have unusual anisotropic properties.

Papers presented at that conference are being prepared for publication in a coming volume of *Macromolecular Symposia*.

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Polymer Characterization

by *Michael Hess*

This year's Polychar World Forum on Polymer Application and Theory was held 7-11 January 2002 in Denton, Texas, USA. This was the 10th conference in the series on relationships between characterization, synthesis, processing, manufacturing, and properties of polymer systems. The Chancellor of the University of North Texas, Warren Burggren, opened the conference, which featured 48 participants from 19 countries and comprised 8 special speakers, 6 invited speakers, 23 normal speakers, and 28 posters.

The number of participants and speakers at the conference was lower than in previous years because of the particular difficulties in travelling these days. The number of registrations was initially much higher, but because of the aftermath of September 11 and unexpected weather problems, many registered participants could not attend. Therefore, the conference suffered from many unexpected gaps in its time schedule. Despite these problems—which were professionally handled by the experienced local crew of the Department of Materials Science and other supporting departments of the University of North Texas—the conference provided an impressive overview of current developments in polymer science.

The conference presenters included a number of well-known scientists, but consisted mainly of those who are at the front line of science-diploma- and doctoral students who presented their results as oral presentations or as posters. For many of the young scientists, this conference is the first occasion to present their work in front of a larger international audience.

The day before the official conference starts, there is a tutorial on analytical methods in polymer characterization, which is presented by notable specialists. This event is very useful for advanced and doctoral students to get an overview of the most important techniques available to characterize polymers in theory and application.

The areas covered by the conference were:

- Predictive Methods
- Polymerization
- Polymer Liquid Crystals
- Mechanical Properties and Performance
- Dielectrical and Electrical Properties
- Surface, Interfaces, and Tribology
- Rheology, Solutions and Processing
- Characterization and Structure-Property Relations
- Recycling

Presentations covered a range of subjects, such as Combinatorial Methods for Polymer Science, Alleviation of Environmental Pollution by Converting Polystyrene Waste into Nonionic Surfactants, Processing and Performance of Polymer-Based Shape Memory Alloy Adaptive Composite, and Biobased Polymeric Flocculants for Industrial Effluent Treatment.

In addition, a number of awards and prizes were announced at the conference:

- The Paul Flory Polymer Research Prize was shared by Ronald Koningsveld, Sittard, The Netherlands, and Moshe Narkis, The Technion Israel Institute of Technology, Haifa, Israel.
- The Prize for the Best Lecture of the Tutorial was awarded to Dirk Schubert, Freudenberg Forschungsdienste, Weinheim, Germany.
- The Bruce Hartmann Award (for a young polymer researcher) was given to Sirina Putthanarat, University of Akron.
- The Carl Klason Award (for the best student paper) went to Ricardo Simoes, University of North Texas, Denton, U. S. A.
- Diplomas of Distinction (for a student's presentation) went to Frederic Dreux, University of Rouen, France; Kwan Yee Lau, Hong Kong University of Science and Technology, China; Joanne Yip, Polytechnic University of Hong, China; and Rice University, Houston, U. S. A.

The next World Forum on Polymer Application and Theory (POLYCHAR 11) will be held in Denton, Texas, 7-10 January 2003 with the Short Course on Polymer Characterization on 6 January 2003.

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Heterocyclic Chemistry

by Thomas T. Tidwell

The 3rd Florida Heterocyclic Conference was held at the University of Florida in Gainesville, Florida, USA from 6-8 March 2002. The conference was organized by the Florida Institute of Heterocyclic Compounds directed by Alan Katritzky, Kenan Professor of Chemistry at the University of Florida. The audience of 100 was distinguished by extensive industrial participation and four of the lectures, by Peter Wuts of Pharmacia (Kalamazoo, Michigan), Graham Johnson of Bristol-Myers Squibb (Wallingford, Connecticut), Joseph Sisko of GlaxoSmithKline (Philadelphia), and Nicolas Bodor of Ivax Corporation and the University of Florida dealt with industrial themes. The topics included the discovery and development of new drugs for the treatment of Parkinson's disease, HIV treatment, and dopamine agonists.

Other lecturers included Ronald Grigg (Leeds University, UK) on cascade reactions for heterocyclic synthesis, William Pearson (University of Michigan) on alkaloid synthesis, Jose Baruenga (University of Oviedo, Spain) on heterocyclic synthesis using metal carbene complexes, Dennis Curran (University of Pittsburgh) on fluororous techniques in organic synthesis, Ernst Anders (University of Jena, Germany) on the synthesis of novel heterocycles, Joachim Schantl (University of Innsbruck, Austria) on synthesis of cyclic azomethine imines, and Nicos Petasis (University of Southern California, Los Angeles) on heterocyclic synthesis using organoboron compounds.



From left to right: Ronald Grigg, Alan Katritzky (the conference organizer), and Jose Barulenga.

A feature of the conference was an initial full day short course on the fundamentals of heterocyclic chemistry. The Florida Heterocyclic Conference is also used to support ARKIVOC (Archive for Organic Chemistry), a free on-line refereed journal covering all aspects of organic chemistry, available at <http://www.arkat.org>.

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