Natural Products

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The traditional centrality of natural products in organic chemistry is reflected in an unbroken series of biennial IUPAC symposia reaching back to 1960. The riches of nature continue to offer inspiration and, increasingly, new challenges and opportunities for discovery and exploitation. This evolving process was reflected in the scientific program of the 23rd International Symposium on the Chemistry of Natural Products, held in Florence, Italy, from 28 July to 2 August 2002, which presented works devoted to a broad cross-section of traditional subdisciplines, while also featuring a range of topics such as proteomics, genetics, and molecular biology.

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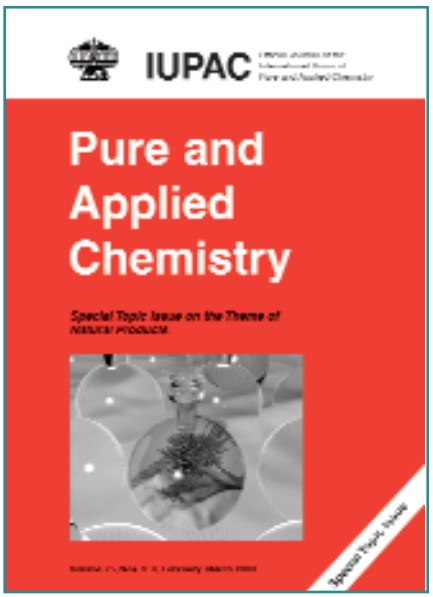
Overall, the symposium was an enriching experience for all those who attended, and undoubtedly a source of inspiration to a large contingent of young scientists from many countries. It is, therefore, desirable to share the topicality and relevance of the event with a wider audience, and this special topic issue of *Pure and Applied Chemistry* offers a representative selection of short reviews and research papers based on the scientific proceedings. It is hoped that it will serve, not only as an enduring record of the current state of natural products research, but also as a signpost pointing to future challenges and opportunities. This issue is part of an ongoing project, which seeks to recognize and offer more in-depth coverage of certain IUPAC-sponsored events featuring new and emerging themes in all branches of chemical sciences. The issue was coordinated by Professors J. Bull and Bruno Botta, chairman of the Conference Organizing Committee.

The symposium attracted about 500 delegates from 45 countries, and the success of the event owes much to an outstanding corps of international scientists who contributed to a program comprising 13 plenary and 16 invited lectures, supported by 57 oral presentations and no less than 250 posters. The lecture program offered diverse coverage of structures and function in life processes, as well as novel approaches for synthesis of complex bioactive compounds. The unifying theme of the conference was interdisciplinary foundations of drug design and synthesis. This theme is encapsulated in the opening plenary lecture that introduces this issue, with an account of new therapeutic leads inspired by nature, and a concluding plenary presentation highlighting the design and execution of classical and new-generation synthetic strategies in pursuit of natural and unnatural targets. Biomimetic and chemoenzymatic approaches recur throughout as a complementary component of modern synthetic methodology, and exemplify the rapidly expanding boundaries of the chemistry-biology interface. New insights into biosynthetic pathways and advances in functional genomics and proteomics research featured prominently in the symposium program. They are reflected in some of the presentations in this collection.

Professor Paul Wender of Stanford University, California, gave the introductory plenary lecture and presented a brilliant overview of his recent research (*Inspirations from Nature: New Reactions, New Therapeutic Leads, and New Drug Delivery Systems*). The following plenary lecture was presented by Professor Gerhard Höfle, Braunschweig, Germany, and provided new molecular insight into the important tubulin systems (Semisynthesis of the Tubuline Inhibitors Epothiolone and Tubulysin). Professor Gerald Pattenden presented his successful research on cascade radical processes and Pd-catalysed reactions in natural product synthesis (*Synthetic Studies towards Biologically Important Natural Products*).



Professor Chi-Huey Wong of the Scripps Research Institute, LaJolla, CA, USA, presented some of his exciting work on the chemoenzymatic synthe-

sis of oligosaccrides and glycoproteins and on the design and synthesis of inhibitors targeting carbohydrate enzymes and specific RNA sequences associated with bacterial infection, inflammatory reactions, and cancer metastasis. Professor Michel Rohmer of the Université Louis Pasteur/CNRS, Strasbourg, France, presented an overview of his discovery of the mevalonate independent pathway for isoprenoid biosynthesis.

Professor Raffaele Riccio of the University of Salerno, Fisciano, Italy, presented the use of advanced NMR spectroscopy and computational techniques for structural assignments of complex natural products. Professor Benito Casu of the Ronzoni Institute for Chemical and Biochemical Research, Milano, Italy, discussed recent results on antiangiogenic, heparin-derived heparan sulphate mimics. The final plenary lecture was presented by Professor Stephen Hanessian of the Université de Montréal, Canada. In an elegant exposé he elaborated on new and old challenges in total synthesis from concepts to practice.

The symposium program reflected the trend that chemistry and biology fully overlap on a molecular level and that the chemistry of natural products will continue to be the core topic for our understanding of life processes and for efforts to utilize the new scientific knowledge for sustainable development. These studies will provide a deeper understanding of the chemistry of life processes and of complex biological and ecological interactions in nature. The scientific challenges as well as the possibilities for sustainable utilization of our natural resourses are enormous—we can learn a lot from Mother Nature.

www.iupac.org/publications/pac/2003/7502

Molecular Order and Mobility in Polymer Systems

T. M. Birshtein (symposium ed.)
Macromolecular Symposia, Vol 191.
Wiley-VCH, 2003, pp. 1–200
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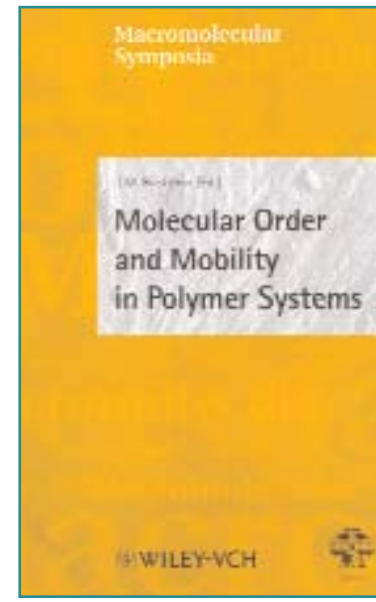

This issue of *Macromolecular Symposia* features papers by invited speakers to the International Symposium on Molecular Order and Mobility in Polymer Systems, which was the fourth in a series of IUPAC-sponsored meetings on macromolecules held in St. Petersburg, Russia. The focus of the symposium was on problems of the equilibrium state in polymer systems. Unfortunately, not all of the speakers could present their work since some material had been published or submitted elsewhere. Nevertheless, this issue provides a more or less complete picture of the symposium.

The event was organized by the institute of Macromolecular Compounds of the Russian Academy of Scientists (RAS). The co-organizers of the symposium were the Department of Chemistry and Material Science of RAS and the Scientific Polymer Council of RAS. The symposium was sponsored by IUPAC and supported by the Russian Foundation for Basic Research and the St. Petersburg Research Center of RAS.

The symposium featured 33 invited lectures, 33 oral communications, and 260 poster presentations. Invited lectures were given by well-known, active researchers, including Nobel Prize Winner P.-G. de Gennes; academicians of RAS; major scientists from Germany, France, Japan, USA, Canada, Netherlands, Spain, Greece, Sweden, Finland, and Russia. The papers represented in this issue are divided into seven thematic groups. Some work could be placed into several groups, and is so indicated. It is worth mentioning that some of the publications differ from the presentations made by their authors at the symposium, reflecting the results of the symposium itself.

Following is a sampling of the many papers to be found in this issue:

- P. G. de Gennes, Weak Segregation in Molten Statistical Copolymers
- A. Darinskii, Computer Simulation of the Liquid Crystal Formation in a Semi-Flexible Polymer System
- A. Blumen, Network Models and Their Dynamics: Probes of Topological Structure