

**ADVANCES IN THERMAL CHARACTERIZATION
OF POLYMERIC MATERIALS**

Special issue

*Dedicated to **Professor Edith A. Turi**
in recognition of her leadership in education*



Edited by
Dr. Mimi Y. Keating
DuPont, Wilmington DE, USA
Guest Editor

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Preface

At long last, this special polymer issue honoring Prof. Edith A. Turi is ready to be handed over to our Editors in the *Journal of Thermal Analysis and Calorimetry*. I am proud to present 45 excellent papers submitted from 16 countries from many well-known scientists who are Edith's colleagues, friends and admirers. These last four months, almost all contributors have kept to the schedule I provided in the beginning and have helped in the reviewing process. The subjects cover many aspects of recent polymer research in the authors' areas of specialization including thermal analysis in structure-property relations, new techniques, complementary or hyphenated techniques, molecular motion and dynamics, polyolefin structure and properties, novel properties, degradation, and art conservation. This issue is a unique collection of papers on the *Advances in Thermal Characterization of Polymeric Materials* and is also a snapshot of the field at the beginning of the new millennium. Readers may look back on what thermal analysis of polymers has accomplished in the last 30–40 years. In the years ahead, the new techniques and new applications will be refined and will flourish.

The overwhelming participation in this polymer issue was attracted by one of the most recognized names and personalities in thermal analysis, Dr. Edith A. Turi, Research Professor and Associate Director of Continuing Education at the Polymer Research Institute, Polytechnic University, Brooklyn, New York. Edith not only led the effort in teaching thermal analysis but also urged her ICTAC Education Committee members, worldwide renowned educators, to set up teaching courses. She has been course director, lecturer and visiting professor in many institutions around the world and had more than 4500 participants in 22 years at her courses.

Prof. Turi earned her Ph.D. at the Technical University of Budapest, Hungary. She had the unique opportunity to work for 26 years for Allied Chemical Corporation (now AlliedSignal), one of the largest and most diversified polymer companies, where she was the head of the corporate thermal analysis research section. Parallel to her industrial research work at Allied, she started in 1975 the series of her annual Polytechnic courses for thermal analysts that gained international reputation. The school, which she joined in 1986, honored Prof. Turi by naming after her its unique thermal analysis laboratory for advanced research and teaching. Her most notable accomplishments include being the editor of the definitive reference book 'Thermal Characterization of Polymeric Materials', published by Academic Press in 1981 (1st Ed., 972 pp.) and 1997 (2nd Ed., 2 volumes, 2420 text pages). She is the US/Canada Regional Editor of the *Journal of Thermal Analysis and*

Calorimetry since 1980 and chairs the Education Committee of the International Confederation for Thermal Analysis and Calorimetry (ICTAC) since 1985. Edith is also the recipient of the 1997 Polytechnic University Presidential Citation for Extraordinary Accomplishment, and the 1996 Special Recognition Award of the Polytechnic (honoring the 20th anniversary of her annual thermal analysis courses). She was elected Society of Plastics Engineers (SPE) Fellow in 1995, received the Exceptional Achievement Award of the American Chemical Society (Education Division) in 1991, the Medal of the Technion, Israel in 1986, the Mettler Award in 1985, and in 1981 became the president of North American Thermal Analysis Society (NATAS), recipient of the NATAS Outstanding Service Award and NATAS Fellow.

I want to thank all the contributors for publishing their best work in this volume. Special thanks to Dr. Howard Starkweather, Jr. and Prof. Bernhard Wunderlich for reviewing most papers in this issue. Other most helpful reviewers were Dr. Bruce Prime and Dr. Peter Haines whose contribution was greatly appreciated. Finally, I am grateful to Central Research and Development, E. I. DuPont de Nemours and Company for providing me the best computers and world-class internet connections, with which the desktop publishing has been made easy by clicking the mouse.

In the eve of handing over this special polymer issue for publication, we hope that there will be another Edith Turi in the next century who devotes energy to the field of Thermal Analysis and Calorimetry as his/her own life mission.

Respectfully submitted,
Mimi Y. Keating
GUEST EDITOR

The Mettler-Toledo Thermal Analysis Education Grant in Honor of Prof. Edith A. Turi has been established to recognize her lifelong contribution to the cause of thermal analysis education. Prof. Turi is the director and principal lecturer of intensive courses in thermal analysis which have been attended by more than 4500 professionals all over the world. She is also the editor of the acclaimed reference book 'Thermal Characterization of Polymeric Materials' (2nd Ed., Academic Press, 1997, 2420 text pages). As chair of the ICTAC Education Committee she has become a renowned leader in promoting the education and application of thermal analysis in the USA and abroad.