



Special Chapter on State-of-the-art Advances in Thermal Analysis and Calorimetry

Guest Editor



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This compilation is based on the peer-reviewed and selected papers of NATAS 2011

Preface

Michael R. Kessler

It is my pleasure to introduce this special collection of papers from the 39th Annual Conference of the North American Thermal Analysis Society (NATAS) which was held August 7–10, 2011 in Des Moines, Iowa, United States. Approximately 200 conference attendees from around the world presented over 200 technical papers in multiple sessions over 3 days. Three Plenary Lectures were delivered by Guy Van Assche (Vrije Universiteit Brussel), John M. Torkelson (Northwestern University), and Andrew R. McGhie (University of Pennsylvania, and this year's recipient of the NATAS-Mettler Award for Outstanding Achievement). The technical program, organized by the technical program chair, Prashanth Badrinarayanan, included papers, presentations, and posters covering the following topics:

1. Advances in Instrumentation and Methods
2. Amorphous Metals and Inorganic Glasses
3. Biomaterials/Bio-Inspired Materials
4. Ceramic Materials
5. Energetic Materials/Thermal Hazards
6. Fast Scanning and Modulated Calorimetry
7. Fire Science and Degradation
8. Food Science
9. General Poster Session
10. General Session
11. Honorary Session for Bruce Prime

12. Hyphenated Thermal Analysis
13. Isothermal Calorimetry/Microcalorimetry
14. Kinetics
15. Localized Thermal Analysis
16. Nanocomposites
17. Pharmaceuticals
18. Professional Enhancement
19. Student Poster Session
20. Thermal Analysis and Rheology of Thermoplastics
21. Thermal Analysis for Battery Applications
22. Thermal Transport and Conductivity
23. Thermoset Materials and Processes

The 2011 honorary session for the conference was dedicated to Dr. Bruce Prime, and included lectures related to thermal analysis applied to thermosetting and thermoplastic polymers, fields in which Dr. Prime has made many technical contributions. The vendor exhibit, which is always a highlight of the conference, gave conference attendees an opportunity to view the latest developments in commercial thermal analysis instrumentation and to talk with the many vendor representatives present for the conference. Our vendors and exhibitors always serve to enhance and strengthen the quality of the conference and improve the experience for our members. The short course, which preceded the conference and was organized by Larry Judovits, was expanded this year to include 3 days of expert instruction on the topics of basic thermal analysis, advanced instrumental analysis, rheology and thermal analysis of polymers and food science.

The conference banquet served as a venue to recognize the achievements of some of our members. Andrew McGhie was presented with the NATAS-Mettler Award for Outstanding Achievement, Chi-Min Shu (National Yunlin University of Science and Technology) was awarded the NATAS Fellow Award, and the Outstanding Service Award went to ManikaVarma-Nair (ExxonMobil Research and Engineering). In addition, the Best Poster

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Award went to Brian Grady (University of Oklahoma), while Best Student Poster Awards went to BalKhatiwada (Oklahoma State University), and Mitch Rock (Iowa State University).

I extend my deep thanks to the many members of the NATAS staff and conference committee for their hard work in organizing such a successful conference. My special thanks to Tina Adams, NATAS president at the time of the meeting, along with the rest of the Executive Committee,

Technical Program Chair Prashanth Badrinarayanan, Proceedings Chair Diana Smirnova, Eric Schoch, Vendor Relations Chair Bob Fidler, Short Course Chair Larry Judovits, Staff Manager Lois Hall, and the many session chairs that recruited and organized papers for their sessions.

I trust that you will find value in reading the peer reviewed articles in this special issue of the Journal of Thermal Analysis and Calorimetry. They represent some of the fine work presented at the NATAS technical conference.

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