

# ASMS FALL WORKSHOP on Polymer Mass Spectrometry

December 9-10, 2004, Hyatt Regency Hotel, Inner Harbor, Baltimore, MD

Program Co-Chairs: Robert Lattimer, *Noveon, Inc.* and Chrys Wesdemiotis, *University of Akron*  
NIST Polymers Division Co-Chair: William E. Wallace

## *In conjunction with the Polymers Division of the National Institute of Standards and Technology*

The use of mass spectrometry for polymer analysis has taken on a new dimension in the past ten years or so. Starting in about 1995, there has been a marked increase in the number of polymer mass spectrometry reports in literature. A major reason for this increase in interest has been the use of desorption/ionization techniques for polymer applications. In this regard MALDI-MS has been especially popular. While MALDI-MS is by no means the only mass spectral method that is useful for polymer analysis, it has provided the impetus to get polymer researchers interested in what mass spectrometry can do.

Some of the most significant applications of modern mass spectrometry to synthetic polymers are (a) chemical structure and end group analysis, (b) direct measurement of molar mass (molecular weight) and molar mass distribution (e.g., in the creation of standards), (c) copolymer composition and sequence distribution, and (d) detection and identification of impurities and additives in polymeric materials. The Fall Workshop will be a two-day seminar divided into the following topics:

- **Polymer structure.** This topic will focus on the use of mass spectrometry for monomer and end group analysis. Principal ionization methods will be MALDI- and ESI-MS, including the use of supplemental techniques (such as tandem mass spectrometry and high resolution mass measurements) to obtain detailed chemical structure information.
- **Chromatography.** This topic will emphasize the combination of liquid chromatographic and field flow fractionation methods with mass spectral analysis of the separated components. It will involve (a) separating mixtures of polymers, (b) fractionating polymers by molecular weight, and (c) the use of MALDI-MS in combination with the separation method.
- **Complex compositions.** This topic concerns the analysis of more complex polymeric systems. Examples will include (a) molar composition and microstructural features in copolymers, (b) polymer blend (mixture) analysis, and (c) compositional details of polymeric formulations (such as commercial materials). Both degradative and direct analysis methods will be discussed.
- **Polymer surfaces.** This topic will include techniques (principally static SIMS) for (a) characterization of intact low-molecular weight polymers, (b) detection of polymer surface features (e.g., functional groups and molecular fragments, elemental composition, surface blooms), and (c) micro-imaging of polymer surfaces.

## SPEAKERS

Joseph Gardella, *SUNY - Buffalo*  
David Hercules, *Vanderbilt University*  
Hajime Ohtani, *Nagoya University*  
Harald Pasch, *Deutsches Kunststoff Institut*  
Concetto Puglisi, *Universita de Catania*  
Hans J. Raeder, *Max Planck Institut*  
William Simonsick, *DuPont Company*  
Kim Williams, *Colorado School of Mines*

**LOCATION.** The Workshop will be held in the Hyatt Regency Hotel, 300 Light Street, Baltimore, MD 21202. The Hyatt Regency is centrally located on the Inner Harbor of the Chesapeake Bay. An open skywalk connects to the shops and restaurants at Harborplace. Major attractions are within walking distance, including the National Aquarium in Baltimore, Maryland Science Center, Port Discovery, Oriole Park at Camden Yards and M&T Ravens. BWI is located 10 miles south of the city and is the primary airport for travelers to Baltimore.

**ACCOMMODATIONS.** Rooms at the Hyatt Regency Baltimore are \$139 for single and \$164 for double. To make a room reservation, call (410) 528 1234 and ask for Reservations. Be sure to mention ASMS to obtain the conference rate.

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Register on line at: <http://www.asms.org/>