

Sunday, June 7, 2015

**ISPAC Short Course:
Polymer Analysis and Characterization**

7:45 AM BREAKFAST – Phantom Ballroom B & C

8:00 AM REGISTRATION, ALL DAY – Phantom Pre-Function Lounge

**SESSION 1
HEMINGWAY ROOM**

**SESSION 2
DÉJÀ VU ROOM**

**8:30 AM Basics of Gel Permeation Chromatography,
Including Multi-Detectors**
-Dr. John McConville

Introduction to Polymer Electron Microscopy
-Professor Matthew Libera

10:00AM Break – Phantom Pre-Function Room

Break – Phantom Pre-Function Room

**10:15 AM Mass Spectrometry Methods for the
Characterization of Synthetic Polymers and
Materials** *-Professor Chrys Wesdemioti*

**Travels in Reciprocal Space: A Tutorial on Images,
Microstructures, Scattering and Fourier
Transforms** *- Dr. Jeff Butler*

11:45 AM LUNCH – Fountain Room

LUNCH – Fountain Room

**12:45 AM Advanced Liquid Chromatography, including 2D-
LC and Hyphenated Methods (LC-NMR, LC-FTIR,
LC-MS)** *-Professor Harald Pasch*

**Small Angle Neutron Scattering: A Tool to Explore
Structure in Complex Fluids and Polymers under
Manufacturing-Related Conditions**
-Dr. Ronald Jones

2:15 PM Break – Phantom Pre-Function Room

Break – Phantom Pre-Function Room

**2:30PM Characterization and Applications of Some
Biopolymers: from Sol to Gel States**
-Professor Marguerite Rinaudo

**Watching the Molecules: a Tutorial on Light
Scattering and Dielectric Spectroscopy**
- Professor Alexei Sokolov

4:00 PM Break – Phantom Pre-Function Room

Break – Phantom Pre-Function Room

**4:15 PM Introduction to Scattering-Based Polymer
Characterization Methods**
- Professor Paul S. Russo

**Scanning Probe Microscopy for Discrimination
and Quantitative Differentiation of Polymer
Materials** *Dr. Dalia Yablou*

5:00 PM Registration- Phantom Pre-Function Lounge

**6:00 PM Welcome Reception – Fountain/Ultimate Ransom Room
Heavy hors d'oeuvres and open bar**

Monday, June 8, 2015 – PHANTOM BALLROOM

Morning Session Theme:

Characterization of Polyolefins

7:00 AM REGISTRATION, ALL DAY – Phantom Pre-Function Lounge

7:00 AM BREAKFAST – Phantom Ballroom B & C

8:00 AM ISPAC Chair Opening Remarks – Phantom Ballroom B & C

-Willem deGroot & Wayne Reed

Invited Lectures:

**Phantom Ballroom B & C Characterization of Polyolefins –
Moderator: Jimmy Mays**

8:15 AM L1 - Contributions of Polyolefin Characterization Techniques to Polymer Catalysis Development and Reaction Engineering

The Dow Chemical Invited Lecture: Joao Soares, University of Alberta

8:45 AM L2 - Characterization of Complex Polyolefins by Cross-Fractionation Techniques

- Benjamin Monrabal, Polymer Char Spain

9:15 AM L3 - Flow-induced Crystallization and Nucleation in Isotactic Polypropylenes

- Scott Milner, Penn State University

9:45 AM DISCUSSION

10:15 AM REFRESHMENT PAUSE – Phantom Ballroom A

Contributed Lectures:

**Phantom Ballroom B Characterization of
Polyolefins – Moderator: Harald Pasch**

**Phantom Ballroom C Characterization
of Biopolymers – Moderator: Petra
Mischnick**

10:45 AM O1 - Size Exclusion Chromatography of Polyoxymethylene and its Polyolefin Blends- Possibilities and Limitations
-Gadgoli Umesh, SABIC

O5 - Conversion and Characterization of Agri-based Materials
-H.N. Cheng, USDA

11:05 AM O2 - Spectroscopic Characterization of Plasma Nitrogenation of Polymer Surfaces at Atmospheric Pressure
-Zohreh Khosravi, Technische Universitat Braunschweig

O6 - DNA-Chitosan Electrostatic Complex Formation: Stoichiometry and Conformation
-Marguerite Rinaudo, CERMAV-CNRS

11:25 AM O3 - Dissolution and Scattering Behavior of Polyethylenes in Dilute solutions and Relations between Molecular parameters
-Jacques Tacx, Sabic

O7 - New Approaches in Analysis of Drug Delivery Formulations: Measuring Domain Sizes in Multi-Component Celluloses Using NMR
-Staffan Schantz, AstraZeneca R&D

11:45 AM O4 - Multidimensional High Temperature Liquid Chromatography
- Robert Brüll, Fraunhofer Institute

O8 - Preparation and Characterization of Microporous Hydrogels of Cellulose Ether Cross-Linked with di- or poly Functional Glycidyl Ether Made for the Delivery of Bioactive Substances
- Olayide Samuel Lawal, Olabisi Onabanjo University

12:05 PM - LUNCH – Phantom Ballroom B & C
Poster Setup in “Room with a View” 11th Floor

- VENDOR TALKS – Fountain Room

12:20 PM

Vendor Talk 1

Cont'd - Monday, June 8, 2015 – PHANTOM BALLROOM

12:40 PM Vendor Talk 2 - Fountain Room

1:00 PM Cont'd Lunch in Phantom Ballroom B & C;
Poster Setup in "Room with a View" 11th Floor Vendor Talk 3 – Fountain Room

Invited Lectures:

Phantom Ballroom B & C Characterization of Biopolymers – Moderator: H.N. Cheng

1:35 PM L4 - A New Frontier in Proteomics: Identifying Proteoforms and Elucidating Proteoform Families from Measurements of Intact Mass and Lysine Count
-Lloyd Smith, Wisconsin

2:05 PM L5 - Self-assembly and Responsiveness of Polypeptide-based Star and Triblock Copolymers: Design, Characterization and Function
-Dan Savin, University of Florida

2:35 PM L6 - Analysis of the Substituent Distribution in Cellulose Ethers
-Petra Mischnick, TU Braunschweig

3:05 PM DISCUSSION

4:30 PM REFRESHMENT PAUSE – Phantom Ballroom A Vendor Talks – Fountain Room

4:40 PM Vendor Talk 4 – Fountain Room

5:00 PM Vendor Talk 5 – Fountain Room

Contributed Lectures:

Phantom Ballroom B Characterization of Polyolefins – Moderator: Benjamin Monrabal

Phantom Ballroom C Characterization of Biopolymers – Moderator: Marguerite Rinaudo

5:30 PM O9 - The Recent Advances and Challenges in Polyolefin Comonomer Distribution Analysis
-Rongjuan Cong, Dow Chemical

O12 - Study of Complex Coacervation of Gelatin A and Pectin for Microencapsulation of Theophylline
-Nirmala Devi, Gauhati University

5:50 PM O10 - New NMR Techniques Developed Recently for Studying Polyolefin Microstructures
-Zhe Zhou, Dow Chemical

O13 - Thermoplastic Elastomer as Toughening Agent for Polylactic Acid (PLA): Effect of Blending Ratio on Morphology and Performance
-Vidhya Nagarajan, University of Guelph

6:10 PM O11 - Characterization of Polypropylene in Dibutoxymethane by High Temperature Gel Permeation Chromatography with Triple Detection
-Steve O'Donohue, Agilent Technologies

O14 - New Insights on Cellulosic Ether Hydrogels
-Bob Sammler, Dow Chemical

6:30 PM Poster Exhibits in Room with a View 11th Floor
Heavy hors d'oeuvres and Open Bar

Tuesday, June 9, 2015 – PHANTOM BALLROOM

7:00 AM REGISTRATION, ALL DAY – Phantom Pre-Function Lounge

7:00 AM BREAKFAST – Phantom Ballroom B & C

Invited Lectures:

Phantom Ballroom B & C Characterization of Polymers Using Scattering Techniques – Moderator: Rafael Verduzco

8:00 AM **L7 - Probing Semi-crystalline and Amorphous Structure in Polymer Systems using Neutron Scattering, Neutron Imaging, and Neutron Spectroscopy**
-Chevron Phillips Invited Lecture Ron Jones, NIST

8:30 AM **L8 - In situ Thin Film Processing Characterization Using X-rays**
-Alexander Hexemer, Lawrence Berkeley National Laboratory

9:00 AM **L9 - Characterizing Block Copolymer Thin Films with Grazing-Incidence Small Angle X-ray Scattering**
-Gila Stein, University of Houston

9:30 AM DISCUSSION

10:00 AM REFRESHMENT PAUSE – Phantom Ballroom A

Contributed Lectures:

Phantom Ballroom B Characterization of Polymers Using Scattering Techniques
Moderator: Ron Jones

Phantom Ballroom C General Polymer Characterization – Moderator: Oscar Chiantore

10:30 AM **O15 - In Situ SANS Studies of Semi-Crystalline Polymers Under Tensile Deformation**
-Jamie Stull, Los Alamos National Laboratory

O19 - Full Molecular Characterization of Complex Polymers: Mission Impossible?
- Harald Pasch University of Stellenbosch

10:50 AM **O16 - Quantifying Tie-Chain Content in Semicrystalline Polyolefins with Vapor-Flow Small-Angle Neutron Scattering**
- Amanda McDermott, NIST

O20 - Monitoring the Onset and Evolution of Polymer Stimuli Responsive Behavior During Synthesis
-Wayne Reed, Tulane University

11:10 AM **O17 - Heterogeneous Deuterium Distribution in Commercial Polyolefins: Measurement and SANS Model**
-Brian Habersberger, Dow Chemical Company

O21 - Synthesis and Characterization of Neem (Azadirachta Indica A.Zuss.) Seed Oil-based Alkyd Resin
Nirmala Devi, Gauhati University -

11:40 AM **O18 - Hydrophobically Modified Ethylene Oxide Urethane (HEUR) Based Coatings: Mesoscale Structure Under Shear and Viscosity**
-Tirtha Chatterjee, Dow Chemical

O22 - Characterization of a New High Temperature Thermoplastic Elastomer Synthesized by Living Anionic Polymerization in Hydrocarbon Solvent at Room Temperature
-Weiyu Wang, University of Tennessee

12:00 PM **Phantom Ballroom B & C**
- LUNCH

Fountain Room
-LUNCH & VENDOR TALKS

12:15 PM

Vendor Talk 6

12:35 PM

Vendor Talk 7

Cont'd -Tuesday, June 9, 2015

Invited Lectures:

Phantom Ballroom B & C Characterization of Polymers using Spectroscopy and Microscopy – Moderator: Julius Vancso

- 1:15 PM **L10 - Understanding the Inner Morphology of Polymeric Nanoparticles: Expect the Unexpected**
-Roberto Simonutti, University of Milan Bicocca
- 1:45 PM **L11 - Nanoscale Molecular Imaging in Polymer Systems**
-Greg Meyers, The Dow Chemical Company
- 2:15 PM **L12 - FT-IR Imaging Advances in Polymer Characterization**
-Rigoberto Advincula, Case Western Reserve University
- 2:45 PM **L13 - An Interfacial Layer – The Key to Properties of Polymer Nanocomposites**
-Alexei Sokolov, University of Tennessee
- 3:15 PM **DISCUSSION**
- 4:00 PM **REFRESHMENT PAUSE – Phantom Ballroom A** **Vendor Talks – Fountain Room**
- 4:10 PM **Vendor Talk 8 – Fountain Room**
- 4:30 PM **Vendor Talk 9 – Fountain Room**

Contributed Lectures:

Phantom Ballroom B Characterization of Polymers Using Spectroscopy and Microscopy – Moderator: Greg Meyers

Phantom Ballroom C General Polymer Characterization Session II – Wayne Reed

- 5:00 PM **O23 - Characterization of a Polyethylene – Polyamide Multilayer Film Using Nanoscale Infrared Spectroscopy and Imaging**
-Curtis Marcott, Anasys Instruments, Inc.
- 5:20 PM **O24 - Solid-State NMR in Industrial Polymer Research**
-Victor Litvinov, DSM Resolve
- 5:40 PM **O25 - Conformational, Crystallinity and Orientation Changes in Poly (Trimethylene Terephthalate) (PTT) During Crystallization Studied by FTIR Spectroscopy**
-Nadarajah Vasanthan, Long Island University
- 7:00 PM **CONFERENCE BANQUET – ROOM WITH A VIEW 11TH FLOOR**
- 5:00 PM **O26 - Field-Flow Fractionation: Solving the Challenges where Size Exclusion Chromatography meets its Limitations and Now Complementing Size Exclusion in Applications that Were not Expected**
-Trevor Havard, Postnova Analytics
- 5:20 PM **O27 - Unique Three-Phase Self-Assembly and Order-Disorder Transition of Poly(cyclohexadiene)-Based Copolymers**
-Konstantinos Misichronis, University of Tennessee
- 5:40 PM **O28 - Use of ACOMP to Monitor Residual Monomer Concentration and Polymer Intrinsic Viscosity Throughout Industrial Scale Polymerization Reactions**
-Michael F. Drenski, Advanced Polymer Monitoring Technologies, Inc.

Wednesday, June 10, 2015 – PHANTOM BALLROOM

7:00 AM REGISTRATION, ALL DAY – Phantom Pre-Function Lounge

7:00 AM BREAKFAST – Phantom Ballroom B & C

Invited Lectures:

**Phantom Ballroom B & C Polymer Surface and Interface Characterization –
Moderator: Pat Brant**

8:00 AM **L14 - Block Copolymer Bottlebrushes: New Routes to Ever Smaller Microdomain Sizes**
-Mahesh Mahanthappa, University of Wisconsin – ExxonMobil Invited Lecture

8:30 AM **L15 - Microstructured Polymers**
-Ned Thomas, Rice University

9:00 AM **L16 - Manipulating Polymers with Light Activated Interfacial Chemistries**
-Chris Ellison, University of Texas

9:30 AM DISCUSSION

10:00 AM REFRESHMENT PAUSE – Phantom Ballroom A

Contributed Lectures:

**Phantom Ballroom B
Mixed Topics - Moderator: Rafael Verduzco**

**Phantom Ballroom C
Mixed Topics – Moderator: Gila Stein**

10:30 AM **O29 - High temperature AFM Imaging and Nanoindentation During the $\beta \rightarrow \alpha$ Transformation of Isotactic poly(Propylene)**
- Davide Tranchida Borealis

O32 - Characterization of Polyelectrolyte Multilayers by Temperature-Controlled Quartz Crystal Microbalance with Dissipation
-Jodie Lutkenhaus, Texas A&M University

10:50 AM **O30 - Design of Interpenetrating Networks for the Formation of Tough Epoxy Resins**
-Megan Robertson, University of Houston

O33 - EIS in Characterization of Polymer based Hydrogel Support for Biomimetic Membrane Applications
-Agnieszka Mech-Doros, Technical University of Denmark

11:10 AM **O31 - Sample Preparation in Polymer Mass Spectrometry**
-Clemens Schwarzinger, Johannes Kepler University Linz

O34 - Strain-Induced Phenomena in Multi-Phase Polymers
-Victor Litvinov, DSM Resolve

11:45 Phantom Ballroom B & C
-LUNCH