

Sunday - June 9, 2013 - 9LH0UUH5RRP

ISPAC Short Course on Polymer Analysis and Characterization

8:00am REGISTRATION, ALL DAY

8:30am **Basics of Gel Permeation Chromatography, including Multi-detectors**
Dr. John McConville, *Polymer Standard Services, USA*

10:00am REFRESHMENT PAUSE

10:30am **Advanced Liquid Chromatography, including 2D-LC and Hyphenated Methods (LC-NMR, LC-FTIR, LC-MS)**
Prof. Harald Pasch, *University of Stellenbosch, South Africa*

12:00pm LUNCH (For Short Course Participants Only)

1:30pm **Characterization and Applications of Several Biopolymers**
Prof. Marguerite Rinaudo, *Joseph Fourier University, France*

3:00pm REFRESHMENT PAUSE

3:30pm-
5:00pm **Introduction to Scattering-Based Polymer Characterization Methods**
Prof. Paul Russo, *Louisiana State University, USA*

7:00pm-
9:00pm **ISPAC RECEPTION (Light Refreshments and Drinks in the Riverview Room)**

Monday - June 10, 2013 - La Nouvelle Orleans East Room

Morning Session Theme: Polymer Separations and Chromatography

8:00am REGISTRATION

Invited Lectures:

8:30am **Coupling Techniques For Copolymer Characterization With Focus On LC-MS**

Prof. Jana Falkenhagen, *Federal Materials Research Institute, Berlin, Germany*

9:00am **HPLC Characterization Of Polymers Utilizing Isotope Effect**

The LG Chem Invited Lecture: Prof. Taihyun Chang, *Postech University., Pohang, Korea*

9:30am **Characterization of Functionalized Nanoparticles for Nanocomposite Applications**

The Waters Corp. Invited Lecture: Dr. Patricia Cotts, *DuPont Central R&D, Wilmington, Delaware*

10:00am DISCUSSION

10:45am REFRESHMENT PAUSE

Contributed Lectures:

11:15am **Different Approaches for the Hyphenation of Size Exclusion Chromatography to Mass Spectrometry for the Structural Elucidation of (Co-)Polymers** Prof. Clemens Schwarzingler, *Johannes Kepler University, Linz, Austria*

11:30am **Advances In Applications Of Polymer Characterization**

Mr. Jeremy Shia, *Waters Corporation, Milford, Massachusetts*

11:45am **Characterization Of Functional Poly(Ethylene Oxide)S And Their Corresponding Polystyrene Block Copolymers By Liquid Chromatography Under Critical Conditions In Organic Solvents**

Dr. Marion Rollet, *University of Marseille / ICR-CROPS, France*

12:00pm **Determination Of Polymer Composition And Composition Distribution By Thermal Field-Flow Fractionation**

Mr. Charles Ponyik, *Colorado School of Mines*

12:15pm **Ultra High Performance Size Exclusion Chromatography Of Synthetic Polymers**

Dr. Miroslav Janco, *The Dow Chemical Company, Spring House, Pennsylvania*

12:30pm LUNCH (Poster Setup in Iberville Room)

Afternoon Session Theme: Scattering and Spectroscopic Methods

Invited Lectures:

2:00pm **Characterizing Polymers By Synchrotron X-Ray Radiation: Ideas, Trends And Opportunities**

Dr. Matthias Ballauff, *Helmholtz Center for Materials and Energy, Berlin, Germany*

2:30pm **Multi-Length Scale Morphology For Low Band Gap Polymer Photovoltaics**

Prof. Thomas Russell, *University of Massachusetts, Amherst*

3:00pm **Characterization Of Polyelectrolytes In Dilute Solutions: Light Scattering And Electrophysiology**

The APMT Invited Lecture: Prof. Murugappan Muthukumar, *University of Massachusetts, Amherst*

3:30pm DISCUSSION

4:15pm REFRESHMENT PAUSE

Contributed Lectures:

4:45pm **Equilibrium Kinetics In N-Alkane-PEO Micelles - A Time Resolved Sans Study**

Dr. Lutz Willner, *Forschungszentrum Juelich, Germany*

5:00pm **Small-Angle X-Ray And Neutron Scattering Study Of A Protein-Cryoprotector System In Liquid, Supercooled Liquid, And Frozen States**

Mr. Evgenyi Shalaev, *Allergan*

5:15pm **Detection Of Polymer-Chain Branching In Complex Polymer Systems Including Linear Polymer Species**

Dr. Milos Netopilik, *Academy of Sciences of the Czech Republic*

5:30pm **Separation And Characterization Of Latex Particles By Asymmetric Flow Field Flow Fractionation And Dynamic Light Scattering**

Ms. Melissa Collins, *Louisiana State University, Baton Rouge, Louisiana*

5:45pm **Application Of Local Thermal Analysis In The Field Of Polymer Science**

Mr. Thomas Fischinger, *Johannes Kepler University, Linz, Austria*

6:00pm **Poster Exhibits and Refreshments in Iberville Room**

Monday - June 10, 2013 - La Nouvelle Orleans West Room

Morning Session Theme: Polymer Separations and Chromatography

Contributed Lectures:

- 11:15am** **Size-Exclusion Chromatography Of Ultrahigh Molecular Weight Cellulose Ethers For Accurate Molecular Weight Distribution Characterization** - Dr. Yongfu Li, *The Dow Chemical Company, Midland, Michigan*
- 11:30am** **SEC-IR Coupled Technique To Characterize Polymer Grafting And Polymer Degradation**
Mr. William Carson, *Spectra Analysis Instruments, Marlborough, Massachusetts*
- 11:45am** **Advances In SEC Analysis For Polymer Engineering Applications**
Dr. Michael O'Leary, *Waters Corporation, Milford, Massachusetts*
- 12:00pm** **SEC-IR Hyphenated System For Characterizing Chemical Compositions Of Copolymers And Polymer Mixtures**
Dr. Ming Zhou, *Spectra Analysis Instruments, Marlborough, Massachusetts*
- 12:15pm** **Advances In Polymer Characterization Using Multi-Detector GPC And Light Scattering**
Dr. Mark Potheary, *Malvern Instruments, Houston, Texas*
- 12:30pm** **LUNCH (Poster Setup in Iberville Room)**

Afternoon Session Theme: Scattering and Spectroscopic Methods

Contributed Lectures:

- 4:45pm** **Molecular Mobility In Polymers By Dynamic FT-IR Spectroscopy Using Continuous Scan Acquisition**
Dr. Sergey Shilov, *Bruker Optics, Billerica, Massachusetts*
- 5:00pm** **Nanoscale Dynamic Mechanical Spectroscopy Of Polymer Blends And Composites**
Dr. Eoghan Dillon, *Anasys Instruments, Santa Barbara, California*
- 5:15pm** **2D Chromatography And The Development Of Advanced Engineering Polymers**
Dr. Stephan Moyses, *Sabco, Selkirk, New York*
- 5:30pm** **Characterization Of Morphology And Orientation Of Uniaxially Oriented Cast Films Confocal And Polarized M-Raman Imaging-Spectroscopy**
Dr. Krisztina Vincze-Minya, *Johannes Kepler University, Linz, Austria*
- 5:45pm** **Surface Analysis And Characterization Of Plasma-Treated Polypropylene (PP) And Polyamide (PA) Films By Contact Angle Measurements, Scanning Electron Microscopy (SEM) And Atomic Force Microscopy (AFM)**
Mr. Ujjwal Joshi, *Kathmandu U., Nepal*
- 6:00pm** **Poster Exhibits and Refreshments in Iberville Room**

Tuesday - June 11, 2013 - La Nouvelle Orleans East Room

Morning Session Theme: Characterization of therapeutic proteins and delivery systems

- Invited Lectures:*
- 8:30am **Quantifying Protein Interactions From "Low" To "High" Concentrations Using Complementary Scattering Techniques** - *The Biogen Idec Invited Lecture:* Prof. Christopher Roberts, *University of Delaware*
- 9:00am **Ensuring Accurate Size And Counts Of Protein Aggregates With Models And Reference Materials**
Dr. Dean Ripple, *US Nat'l. Inst. Standards & Technology (NIST), Gaithersburg, Maryland*
- 9:30am **High Resolution Characterization Of Proteins In Amorphous Solid Powders**
Prof. Elizabeth Topp, *Purdue University, West Lafayette, Indiana*
- 10:00am **DISCUSSION**
- 10:45am **REFRESHMENT PAUSE**
- Contributed Lectures:*
- 11:15am **Investigating The Significance Of Submicron Particles For Protein Pharmaceutical Stability**
Dr. Mark Brader, *Biogen Idec, Cambridge, Massachusetts*
- 11:30am **Surface Protein Adsorption Characterization By Quartz Crystal Microbalance With Dissipation (QCM-D): Case Studies** - Dr. Sambit Kar, *Pfizer, Inc., Chesterfield, Missouri*
- 11:45am **Use Of Simultaneous Multiple Sample Light Scattering (SMSLS) For Determination Of Equilibrium Properties And Aggregation Kinetics Of Protein** - Prof. Wayne Reed, *Tulane University, New Orleans, Louisiana*
- 12:00pm **Aggregate And Particle Analysis For Protein Therapeutics – Current Methods, Challenges And New Trends**
Dr. Alexandra Kafka, *Coriolis Pharma, Munich, Germany*
- 12:15pm **Protein Quaternary Structure Characterization: The Effect Of Protein Self-Association On Analytical Method Development** - Dr. Qin Zou, *Pfizer, Inc., Chesterfield, Missouri*
- 12:30pm **LUNCH**

Afternoon Session Theme: Current challenges in analysis and characterization for new polymers and natural products

- Invited Lectures:*
- 2:00pm **Advanced Hydrogels: Design And Characterization**
The Tulane PolyRMC Invited Lecture: Prof. Tim Lodge, *University of Minnesota, Editor, Macromolecules*
- 2:30pm **Application Of MALDI-TOF MS And IMS-MS For Elucidating Macromolecular Architecture**
The PSS Invited Lecture: Prof. Scott Grayson, *Tulane University, New Orleans, Louisiana*
- 3:00pm **DISCUSSION**
- 3:45pm **REFRESHMENT PAUSE**
- Contributed Lectures:*
- 4:15pm **GPC And NMR Characterization Of A Lytic Copolymer**
Prof. Fabio Florenzano, *UNIFAL-MG, Brazil*
- 4:30pm **pH-Responsive Amphiphilic Copolymers Via RAFT. Synthesis And Characterization**
Prof. Alina Alb, *Tulane University PolyRMC, New Orleans, Louisiana*
- 4:45pm **Interfacial Curvature Effects In The Self-Assembly And Responsiveness In Polypeptide-Based Star And Triblock Copolymers** - Dr. Daniel Savin, *Univeristy of Southern Mississippi, Hattiesburg, Mississippi*
- 5:00pm **Countervailing Effects Of Ionic Strength And Composition On The Lower Critical Solution Temperature (LCST) Of Copolymers Of Poly(N-Isopropyl Acrylamide) And Acrylamide**
Mr. Colin Mcfaul, *Tulane University PolyRMC, New Orleans, Louisiana*
- 5:15pm **Synthesis And Properties Of Biohybrid Glycopolymers And Chimeric Polysaccharides Capable Of Ionotropic Gelation** - Prof. Marquerite Rinaudo, *Joseph Fourier University (Grenoble, France)*
- 5:30pm **Abnormal Elution Of High Molecular Weight Polysaccharides Using Size Exclusion Chromatography**
Dr. Marie Dufrechou, *CNRS / LoF Bordeaux, France*
- 5:45pm **Multiple-Particle Tracking Study Of The Microheterogeneity Of β -Glucan-Rich Hydrocolloidal Extractive Suspensions** - Dr. Jingyuan Xu, *NCAUR, ARS, USDA, Peoria, Illinois*
- 7:30pm **CONFERENCE BANQUET (Court of Two Sisters)**

Tuesday - June 11, 2013 - La Nouvelle Orleans West Room

Morning Session Theme: Characterization of therapeutic proteins and delivery systems

Contributed Lectures:

- 11:15am** **Synthesis Of Polyhydroxyalkanoates (PHA) From Pseudomonas Aeruginosa, Using Glucose As A Carbon Source. An Alternative To Mitigate The Environmental Impact From CTSA Approach**
Mr. Michael Diaz, *Universidad Pedagógica Nacional de Colombia, Bogotá, Columbia*
- 11:30am** **Polypeptides From Inside Out: Techniques For Investigating Their Dynamical Behavior And Properties**
Ms. Cornelia Rosu, *Louisiana State University, Baton Rouge, Louisiana*
- 11:45am** **Study Of The Mechanism Associated To The Mucoadhesion Phenomena In Polymers For Pharmaceutical Applications**
Dr. Jairo Perilla, *National University of Colombia, Bogotá*
- 12:00pm** **Customized Triglycerides For Polymer Synthesis**
Dr. H. N. Cheng, *USDA Agricultural Research Service, New Orleans, Louisiana*

Afternoon Session Theme: Current challenges in analysis and characterization for new polymers and natural products

Contributed Lectures:

- 4:15pm** **Characterization Of A New Sulfonated, High Temperature Polymer For Use In Hydrogen Fuel Cells**
Mr. David Randle, *Diablo Analytical*
- 4:30pm** **Stimuli Responsive Ultrahydrophobic Polymer Surfaces Synthesis, Characterization And Application**
Dr. Thorsten Hofe, *PSS GmbH / Leibniz Inst., Dresden, Germany*
- 4:45pm** **Determination Of Inorganic Elements In Brazilian Oxo-Biodegradable Plastics By Neutron Activation Analysis**
Mr. Mateus Boscaro, *University of Sao Paulo, Brazil*
- 5:00pm** **Utility Of Chromatographic And Spectroscopic Techniques For Detailed Characterization Of Complex Macromolecules** - Dr. Ema Zagar, *National Institute of Chemistry / Slov. Inst./King Abdul University, Saudi Arabia*
- 5:15pm** **Characterization Of A Non-Ionic, Water Soluble, Helical, Rod-Like Polymer**
Mr. Wayne Huberty, *Louisiana State University, Baton Rouge, Louisiana*
- 5:30pm** **Understanding Branching Heterogeneity Of C60 Core Star Polymers By Temperature Gradient Interaction Chromatography** - Dr. Dianna Pickel, *Oak Ridge National Laboratory, Tennessee*
- 5:45pm** **Original Mechanical Characterization Of Single Micrometric Vesicle By Atomic Force Microscopy**
Prof. Marguerite Rinaudo, *Joseph Fourier University (Grenoble, France)*

Wednesday - June 12, 2013 - La Nouvelle Orleans East Room

Session Theme: Modeling/computational approaches and comparison with experimental methods

Invited Lectures:

- 8:30am Inverting Models Of Polymer Rheology For Analysis And Characterization**
Prof. Sachin Shanbhag, *Florida State University, Tallahassee, Florida*
- 9:00am The Structural Rheology Of Long Chain Branched Polymers - Measuring And Modelling Macromolecules In Flow**
Prof. Tom McLeish, *Durham University, UK*
- 9:30am DISCUSSION**
- 10:15am REFRESHMENT PAUSE**
- Contributed Lectures:*
- 10:45am Investigating The Effects Of Supercritical Carbon Dioxide And Hydrogen Sulfide Mixes On The Morphology Of Polyphenylene Sulfide And A Fluoroelastomer** - Dr. Bernadette Craster, *TWI Ltd., UK*
- 11:00am Probing Industrial Polymer Compositions Using Liquid Chromatography Coupled To Infrared Spectroscopy Detection** - Dr. Cherie Owens, *Sabir, Selkirk, New York*
- 11:15am Adaptation Of Automatic Continuous Online Monitoring Of Polymerization Reactions (ACOMP) to Industrial Scale Reactors** - Mr. Michael Drenski, *Advanced Polymer Monitoring Technologies, Inc., New Orleans, Louisiana*
- 11:30am Inferring CCD Using Crystaf - Uncertainty Analysis**
Mr. Arsia Takeh, *Florida State University, Tallahassee, Florida*
- 11:45am Detailed Characterization Of The Composition And Morphology Of Polystyrene-B-Poly(Ethylene Oxide) -B-Polystyrene Of Interest As Solid Electrolytes For Lithium Batteries**
Ms. Berengere Pelletier, *U. Marseille / ICR-CROPS, France*
- 12:00pm Thermal Degradation Kinetics Of Un-Irradiated And High Energy Protons Irradiated Polyvinyl Butyral**
Dr. Hassan Behnejad, *University of Tehran, Iran*
- 12:15pm Characterization Of Chemical Composition Heterogeneities In Polyolefins Using Two-Dimensional Liquid Chromatography With Online Infrared Absorbance Detector**
Dr. Dean Lee, *The Dow Chemical Company, Midland, Michigan*
- 12:30pm Preparation And Characterization Of Swift Heavy Ion Beam Irradiated Polycarbonate/ Zinc Oxide Nanocomposites Films** - Mulayam Gaur, *Hind. Col. Sci. Tech, India*

Wednesday - June 12, 2013 - La Nouvelle Orleans West Room

Session Theme: Modeling/computational approaches and comparison with experimental methods

Contributed Lectures:

- 10:45am** **Characterization And Comparative Study Of Polymers Used As Viscosity Index Improvers For Automotive Lubricant Oils** - Prof. Maria Elisa Silva, *Federal University of Minas Gerais, Brazil*
- 11:00am** **Rheological Characterization Of Gum Polymers Using Rotational And Oscillation Tests**
Dr. Mar Nieto, *TIC Gums, Inc., White Marsh, Maryland*
- 11:15am** **Blown Film Stability Of Bimodal Polyethylene Resins**
Ms. Cecilia Treviño-Quintanilla, *Monterrey Tech., Mexico*
- 11:30am** **Polyolefin Characterization By Diffusion Ordered NMR Spectroscopy**
Dev Ranjan Pradhan, *Sabic, Saudi Arabia*
- 11:45am** **Polyolefin Microstructure Analysis Via Triple Detector HT GPC Combined With FT IR Detection**
Dr. Tianzi Huang, *The Dow Chemical Company, Freeport, Texas*
- 12:00pm** **Application Of Malvern Polyolefin Characterization Technologies For The Process Control Of UHMW Polyethylene Resins And Fibers** - Dr. Wei-Sen Wong, *Malvern Instruments, Westborough, Massachusetts*
- 12:15pm** **Surface Thermodynamic Properties Of Cellulose Acetate Propionate-Poly (Caprolactone) Diol Blend By Inverse Gas Chromatography**
Seella Ramanaiah, *Sri Venkateswara U.*
- 12:30pm** **Preparation And Characterization Of Doxorubicin HCl Loaded Chitosan Nanoparticles Prepared By W/O Emulsion Method** - Hiral Modi, *Saraswati Inst. Pharm. Sci.*