

TPM&F

Thermoplastic Materials and Foams



A divisional newsletter of the Society of Plastics Engineers

TPM&F SCOPE

The Thermoplastic Materials and Foams Division is organized to provide a focal point for the interchange of information relating to non-vinyl thermoplastic resins including fluoropolymers, polyamides, polyesters, polyolefins, polystyrenes, polyurethanes, their filled and/or reinforced products, and their foamable and foamed products. Its interests lie in stimulating the development of scientific and engineering knowledge. By encouraging participation between producers and consumers, it aims to provide information on new developments which shall encompass synthesis, characterization, fabrication, safe handling, application, serviceability, and marketing.

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CHAIRMAN'S MESSAGE



Happy New Year to all. The New Year has thus far brought mild winter weather throughout the country and I am sure everyone is enjoying it. I also have some exciting news from the Thermoplastic Materials and Foams Board of Directors and I will share in this issue.

First of all, I would like to share some changes in our Board membership. Dale Grove has officially joined the Board from Jan. 2012. He will continue to serve as a Best Paper Chairman. He has replaced our outgoing Board of Director, Camilo Cano. I would like to thank Dr. Cano for his support as a Membership Chair in the past two years. The open Membership Chair position will be filled by Dr. Ajit Ranade. He is currently an ad hoc member. Ajit will assist in achieving the membership goals for the TPM&F Division.

By the time you receive this newsletter, I hope you have already made plans or considering attending 2012 International Polyolefins Conference and FlexPackCon being held at the Hilton Hotel North (February 26-29) in Houston, TX. Andy Chatterjee and Donna Davis have planned two very interesting technical sessions at the conference. The sessions are on "Polyolefins in Rigid Packaging" and "Advancements in Polyolefin Foams". The detail technical program can be viewed on the SPE's website (www.4spe.org).

Please plan to attend our next board meeting on Feb. 28th from 7:30 p.m. to 10:00 p.m. CST in Houston, TX during the Polyolefins 2012 Conference. The meeting is open to all interested members and may be joined in person or by phone.

I am please to inform that a new website for the TPM&F Division will go live by March 1st. I would like to thank our Communication Chair, Theresa Healy, for taking the leadership in this effort and fulfilling one of the division goals for the year. Please read more details on the new website by Ms. Healy in the newsletter.

continued on page 2

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CHAIRMAN'S MESSAGE

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The plans for FOAMS®2012 are underway by Dr. Miguel Perez and his team. The Foams Tutorial and the conference will take place in Barcelona, Spain from September 10 to 13. The venue is now confirmed. It will be held in emblematic hotel, Hotel Porta Fira, in Barcelona city. The hotel was designed by a prestigious Japanese architect named Toyo Ito. It is conveniently located from the city centre and Barcelona airport.

We plan to present this year's Outstanding Achievement Award (OAA) during FOAMS®2012 conference. Generally, the award is given out during ANTEC®. Please stay tuned for more details from Vipin Kumar, OAA Chairman. This year six technical sessions are planned by Technical Program Chair, Donna Davis, at ANTEC®2012. The conference will take place this year in April. You will have an opportunity to attend the conference and visit NPE™2012 tradeshow held at the same time in Orlando, FL.

We hope all the efforts and hard work by the TPM&F Board of Directors will benefit your SPE and TPM&F membership. Please let us know what else we can do to improve benefits from your membership. You can contact me or any of the Board members.

Sincerely,

— **Perry Vadhar**



TPM&F Related Events in PO 2012 Conference

BOD meeting at Hilton Houston North Hotel, Monday February 27, from 7 p.m. to 9:30 p.m.

TPM&F TECHNICAL SESSIONS

SESSION 7 - TUESDAY MORNING, SALON D

POLYOLEFIN IN RIGID PACKAGING

- 8:00 AM Rigid Packaging: The Role of Recycling in Packaging Choices
Keith Christman, American Chemistry Council
- 8:30 AM Techniques for Quality and Consistency of Plastic Sheet for Thermoformers,
Don Hylton, McConnell Company
- 9:00 AM Next Generation HDPE for Blow Molding
Mridula Kapur, Dow
- 9:30-10:30 BREAK
- 10:30 AM HDPE for Injection Stretch Blow Molding
Mike McLeod, Total
- 11:00 AM Two-stage ISBM Opportunities for Polyolefins, Polypropylene
Scott Steele, Plastics Technologies, Inc.,
- 11:30 AM Intermaterial Competition of PE versus PP in light of the recent Developments in the U.S feedstock Position,
Swamy J.N. Chemical Market Resources,

SESSION 11 - TUESDAY AFTERNOON, SALON D

ADVANCEMENTS IN POLYOLEFIN FOAMS

- 1:30 PM Expanding the Envelope of Foamed Polyolefin Elastomers,
Manu Rego, Dow Chemical Company,
- 2:00 PM Weight Reduction Solutions and Performance Improvements using Expanded Polyolefin Bead Foams,
Steven Sopher, JSP (Japan),
- 2:30 PM Worldwide Tank Building Applications using PP Sheets: the Effect of Foaming on Properties
Marcus Hoffmann, Simona AG (Germany),
- 3:00-4:00 Break
- 4:00 PM Feed Enhancement Technology for Twin-Screw Compounding of Low Bulk Density Material
Paul Andersen, Coperion Corporation,
- 4:00 PM Controllability of Cellular Structure of Polypropylene Foams by Core-Back Foam Injection Molding
Masahiro Ohshima, Kyoto University (Japan)
- 5:00 PM Radiation Processing of Polyolefins: High Melt Strength and Foamability
Edward Phillips, E-Beam Services, Inc.

For the full program see pages 5 and 6

MEET YOUR BOARD MEMBERS

DALE GROVE



Driven PhD Chemical Engineer with over 20 years of successful product/process development and launches. Expertise in foamed packaging, filtration, composites, gypsum facers, coatings, long fiber thermoplastic, polymer extrusion, molding, and lamination. Engineering skills in sourcing/specifying/scaling new equipment in the wet-lay and coating areas. Previous management and project management experience. Additional skills include business case writing including ROI and cost calculations, ten patents with others pending, numerous papers including one book chapter on composite processing, and a six sigma black belt.

An energetic problem solver with flexible, future oriented, visionary qualities that consistently meets deadlines and exceeds expectations. Dr. Grove received a doctoral degree in Chemical Engineering from Georgia Institute of Technology in 1992. His SPE experiences include:

- Co-Chairing Continuous Council Improvement Team (2007-present)
- Honored Service Member (2008)
- Divisions Committee Chair (2008-2009)
- Councilor for the Composite Division (2006-on)
- Newsletter Editor for the Composite Division (2005-2006)
- Chair of the Composite Division (2003-2005)
- Vice Chair of the Composite Division (2001-2003)
- Secretary of the Composite Division (1997-2001)
- Long Fiber Thermoplastic Conference Chair (2004)
- ANTEC® Composite TPC (1996)
- President of Georgia Tech Student Chapter (1986)

CHUL B. PARK



Dr. Chul B. Park is Professor and a holder of Tier I Canada Research Chair in Microcellular Plastics at University of Toronto. He is also the Founder and Director of the Microcellular Plastics Manufacturing Laboratory, which enjoy the reputation of being one of the pioneering research institutions in refining various foaming technologies. He is also establishing the Centre for Industrial Application of Microcellular Plastics with \$9M industry-scale equipment to transfer the technology to industry. As a Fellow of SPE, RSC, AAAS, CAE, EIC,

ASME, and CSME, he is an accomplished scientist with international recognition in the field of plastic foaming. Professor Park is the author or co-author of over 700 publications including 20 patents and 200 journal papers. He is also active in professional activities. He is Editor-in-Chief of the Journal of Cellular Plastics and serves as an advisory editorial board member of Cellular Polymers and Advances in Polymer Technology. He has been organizing the Foam Symposia at PPS. He also served on FOAMS™ TopCon 2006 and ANTEC™ TPM&F 2008 and 2009 as the Technical Program Chair. He was the Conference Co-Chair for Biofoams 2007 and 2011, and the Conference Chair for Biofoams 2009. He received his PhD from MIT in 1993.

ASHUTOSH H. SHARMA



Ashu is currently Councilor for TPM&F Division and has served as SPE Council's Divisions Committee Chair. He has also been Chair of the division in the past and has held position of Technical Program Chair prior to that. He has about 30 years of experience in chemicals and plastics industry. Ashu started his career at Akzo Nobel in England where he had increasing responsibility leading to position of Technical Development Manager for Poly-

mer Chemicals business unit and he worked at their various locations in Europe and USA prior to moving to Ciba (part of BASF) as a Global Project Leader for developing Polymers Surface Modifiers Additives. He is currently working as Director of Technology, Innovation for Flint Hills Resources, LP (part of KOCH Industries) where he is responsible for evaluation of emerging technologies. Ashu holds several patents and has authored several peer reviewed papers; he obtained his PhD from the University of London. In addition to SPE, he is also an active member of American Chemical Society and Royal Society of Chemistry, UK.

2012 INTERNATIONAL POLYOLEFINS CONFERENCE



| Session | Last Name | First Name | Company | Paper Title | Session Chair/Location | Start Time | Special Events |
|--|--------------|---------------|-----------------------------|--|----------------------------------|--------------------|---|
| Tutorial - Sunday Afternoon Feb 26 | | | | Tutorial | Donna Davis | Sunday PM | |
| 15-1 | Argenun | Pal | Albermarle | Catalysts for Olefin Polymerization and Their Impact on Structure Property Relationships | SALON C | 1:30 PM | Volunteer Lunch 1-2, Campobello Rm. |
| | | | | Break | Break | | |
| | Argenun | Pal | Albermarle | Catalysts for Olefin Polymerization and Their Impact on Structure Property Relationships | | | Student Dinner 6-8PM, Davinci Room |
| | | | | FlexPack Reception | Donatello Room | 5:30-7:00PM | FlexPack Reception |
| Session 1 - Monday Morning Feb 27 | | | | South Texas Section Plenary Session | Tom Walsh | Monday AM | |
| 1-1 | Rappaport | Howard | CMAI | The Changing Polyolefin Landscape | SALON A&B | 8:15 AM | Speaker's Breakfast 7-9, Salon 10 |
| 1-2 | Eller | Robert | Eller Associates | Current and Future Potential of Polyolefins, TPO and TPV in the Automotive Sector | | 8:45 AM | |
| 1-3 | Singh | Rajiv | Conoco Phillips | Copolyene - Market Entry Perspectives | | 9:15 AM | |
| | | | | Break | Break | 9:45-10:30 | Judging of Student Posters, North Foyer |
| 1-4 | Kaiser | Lisa | Homeland Security | The Evolution of Industrial Control Systems Security | | 10:30 AM | |
| 1-5 | Rauscher | David | Total | Plastics of the 21st Century | | 11:00 AM | |
| 1-6 | Iyer | Srivatsan San | Braskem | North America Polyolefins -- Incremental Change or Transformation | | 11:30 AM | |
| | | | | Lunch | Donatello Room | 12-1:30PM | Lunch 12-1:30 PM |
| Session 2 - Monday Afternoon Feb 27 | | | | South Texas Section Polyolefin Testing and Characterization | Vassilios Galitsatos | Monday PM | |
| 2-1 | Wintner | Henning | UMass - Amherst | Time-Resolved Rheometry Tools for the Study of Polyolefin Crystallization | SALON A | 1:30 PM | Sessions 2 & 3 are Concurrent |
| 2-2 | Jacoby | Phil | Mayzo Inc. | New Developments in Beta Nucleation of Polypropylene | | 2:00 PM | |
| 2-3* | Shetty | Roshan | Anasys Instruments | Nanoscale chemical composition mapping of Polymers at 100 nm spatial resolution with AFM-based IR spectroscopy | | 2:30 PM | |
| | | | | Break | Break | 3:00-4:00 | Judging of Student Posters, North Foyer |
| 2-4 | Menard | Kevin | PerkinElmer | An overview of thermal analysis techniques for the polyolefin industry | | 4:00 PM | |
| 2-5 | Parrott | Albert | Polymer Char | A New High Temperature GPC-IR for Increased Stability, Improved Sensitivity and Composition Measurement of Polyolefins | | 4:30 PM | |
| 2-6 | Wong | Weisen | Malvern Instruments, Inc | Application of high temperature chromatographic and viscometric techniques for the characterization of polyolefins | | 5:00 PM | |
| Session 3 - Monday Afternoon | | | | FlexPack Open Innovations: Trends, Drivers, & Techniques | Chris Kercher/Paul Waller | Monday PM | |
| 3-1 | Barrett | Mark | Kraft | Open Innovations at Kraft | SALON C | 1:30 PM | Sessions 2 & 3 are Concurrent |
| 3-2 | Skulan | Andrew | Clorox | Evolution of R&D Partnering at Clorox | | 2:00 PM | |
| 3-3 | Brown | Marisa | APQC | Sharing Knowledge in Product Development: Selected Best Practices from APQC Research | | 2:30 PM | |
| | | | | Break | Break | 3:00-4:00 | Judging of Student Posters, North Foyer |
| 3-4 | TBD | TBD | TBD | [[General Mills and P&G are tentative]] | | 4:00 PM | |
| 3-5 | Childress | Blaine | SealedAir | Working Title -- Open Innovations at Sealed Air | | 4:30 PM | |
| 3-6 | Davis | Sandra | DuPont | Working Title -- Open Innovations at DuPont | | 5:00 PM | |
| | | | | Reception | Donatello Room | 5:30-7:30 | Reception 5:30-7:30PM |
| Session 4 - Tuesday Morning Feb 28 | | | | South Texas Section Polyolefin Nano Composites | George Roberts * | Tues AM | |
| 4-1 | Andersen | Paul | Coperion | Compounding Layered Silicate Polymer Nanocomposites | SALON A | 8:00 AM | Speaker's Breakfast 7-9AM, Salon 10 |
| 4-2 | Pawloski | Adam | Interfacial Solutions | Nanocomposite Foams | | 8:30 AM | Session 4,5,6, & 7 are Concurrent |
| 4-3* | Dilworth | Michael | Dilworth IP, LLC | Recent Developments in Obtaining and Enforcing Intellectual Property Rights in Nanocomposites | | 9:00 AM | |
| | | | | Break | Break | 9:30-10:30 | Final Judging of Student Posters, North Foyer |
| 4-4 | Sue | Hung-Jue | Texas A&M University | Electrical Conductivity and Thermal Stability of PP Containing Disentangled Carbon Nanotubes | | 10:30 AM | |
| 4-5 | Lan | Tie | Nanocor | Nano-Effect, Bentonite Clay Based Plastics Additives | | 11:00 AM | |
| 4-6 | Schirmer | Henry | BBS Corporation | Ultra-thin Nano-layer Shrink-Stretch Films | | 11:30 AM | |
| 4-7 | Hunter | Douglas | Southern Clay | Polyolefin Clay Nanocomposites | | 12:00 Noon | |
| Session 5 - Tuesday Morning | | | | PMAD Advances in Polyolefin Stabilization 1 | Thoi Ho | Tues AM | |
| 5-1 | Singh | Balaji | Chemical Market Resources | Global Status of Polyolefins R&D | SALON B | 8:00 AM | Speaker's Breakfast 7-9AM, Salon 10 |
| 5-2 | Zahaika | Hayder | Chemtura | Liquid Blend Solutions for Polyethylene Stabilization | | 8:30 AM | Session 4,5, 6 & 7 are Concurrent |
| 5-3 | Mara | John | Songwon | New Stabilization Strategies for Controlled Rheology Polypropylene Fibers | | 9:00 AM | |
| | | | | Break | Break | 9:30-10:30 | Final Judging of Student Posters, North Foyer |
| 5-4 | Fay | Joseph | BASF | Stabilization of Polyolefins for Building and Construction Applications | | 10:30 AM | |
| 5-5 | Becker | Ronald | Chemtura | Advanced Stabilization for Medium to Extra High Voltage Cable Applications | | 11:00 AM | |
| 5-6 | Kochesfahani | Saied | Imerys Talc | Sustainable and Innovative Talc Products for Polymers | | 11:30 AM | |
| Session 6 - Tuesday Morning | | | | FlexPack Materials & Methods - Session A: Materials & Manufacturing | Richard Dayrit | Tues AM | |
| 6-1 | Roy | Sushant | Ingenia | Polymer Additives/Pigment Concentrates for Polyolefin films | SALON C | 8:00 AM | Speaker's Breakfast 7-9AM, Salon 10 |
| 6-2 | Chow | Edgard | Kuraray | Improving performance of Bulk Packaging of Liquids through the use of Modified Ethylene Vinyl Alcohol (EVOH) | | 8:30 AM | Session 4,5, 6 & 7 are Concurrent |
| 6-3 | Kerscher | Chris | A. Schulman | Papermatch -- Imparting the Look, Feel, and Performance of Paper in Traditional Film Structures | | 9:00 AM | |
| | | | | Break | Break | 9:30-10:30 | Final Judging of Student Posters, North Foyer |
| 6-4 | Jester | Randy | Topas Advanced Films | Predicting Barrier Performance for a COC Enhanced As-Extruded Hand Sanitizer Barrier Film | | 10:30 AM | |
| 6-5* | Armstrong | Robert | Evalca | Modified Ethylene Vinyl Alcohol (EVOH) with Improved Orientability | | 11:00 AM | |
| 6-6 | Davis | Sandra | DuPont | Opportunities for Opacity Optimization | | 11:30 AM | |
| Session 7 - Tuesday Morning | | | | TPM&F Polyolefins in Rigid Packaging | Donna Davis * | Tues AM | |
| 7-1* | Christman | Keith | American Chemistry Council | Rigid Packaging: The Role of Recycling in Packaging Choices | SALON D | 8:00 AM | Speaker's Breakfast 7-9AM, Salon 10 |
| 7-2 | Hylton | Don | McConnell Company | Techniques for Quality and Consistency of Plastic Sheet for Thermoformers | | 8:30 AM | Session 4,5, 6 & 7 are Concurrent |
| 7-3 | Kapur | Mridula | DOW | Next Generation HDPE for Blow Molding | | 9:00 AM | |
| | | | | Break | Break | 9:30-10:30 | Final Judging of Student Posters, North Foyer |
| 7-4 | McLeod | Mike | Total | HDPE for Injection Stretch Blow Molding | | 10:30 AM | |
| 7-5 | Steele | Scott | Plastics Technologies, Inc. | Two-stage ISBM Opportunities for Polyolefins, Polypropylene | | 11:00 AM | |
| 7-6* | Swamy | J.N. | Chemical Market Resources | Intermaterial Competition of PE versus PP in light of the recent Developments in the U.S feedstock Position | | 11:30 AM | |
| | | | | Lunch | Donatello Room | 12-1:30PM | Lunch 12-1:30 PM |

2012 INTERNATIONAL POLYOLEFINS CONFERENCE



| Session | Last Name | First Name | Company | Paper Title | Session Chair/Location | Start Time | Special Events | |
|--|-------------|--------------|--------------------------------|---|---------------------------|----------------|--|--|
| Session 8 - Tues Afternoon Feb 28 | | | | | | | | |
| | | | South Texas Section | Specialty and New Polyolefin Applications | Luyi Sun | Tues PM | | |
| 8-1 | Elsa Guzman | Teipel | Natural Composites Inc. | Natural Functional Fillers from Agricultural Waste to Reinforce Polymeric Composites Coconut Shell Powder Technology | SALON A | 1:30 PM | Session 8,9,10, & 11 are Concurrent | |
| 8-2 | Sita | Lawrence | University of Maryland | Towards Commercialization of Functionalized Precision Polyolefins | | 2:00 PM | | |
| 8-3 | Popwell | Sam | Univ of Florida | Morphology Responsive Precision Acid, Ionomer, and Ionic Liquid Polymers | | 2:30 PM | | |
| | | | | | | Break | 3:00-4:00 | |
| 8-4* | Guo | Zhanhu | Lamar Univ | Magnetic Polypropylene Nanocomposites: Property Manipulation by Maleic Anhydride Grafted Polypropylene with Different Molecular Weights | | 4:00 PM | | |
| 8-5 | Boisson | Christophe | CNRS | Preparation of polyethylenes bearing a functional chain end and their use for the design of original polyethylene based materials | | 4:30 PM | | |
| 8-6 | | | | | | | 5:00 PM | |
| Session 9 - Tuesday Afternoon | | | | | | | | |
| | | | PMAD | Advances in Polyolefin Stabilization 2 | Ron Becker | Tues PM | | |
| 9-1 | Burns | Greg | Milliken | TBD | SALON B | 1:30 PM | Session 8,9,10, & 11 are Concurrent | |
| 9-2 | Jakupca | Mick | Dover | Ancillary Benefits of an Alkylphenol-Free High Molecular Weight Phosphite Stabilizer | | 4:00 PM | | |
| 9-3 | Nayak | Kas | Albemarle | Ethanox 330, A Proven Antioxidant Solution for Polyolefins | | 2:30 PM | | |
| | | | | | | Break | 3:00-4:00 | |
| 9-4 | Sanders | Brent | Cytec | Building and Constructing New Stabilizers | | 4:00 PM | | |
| 9-5 | White | Kevin | Texas A&M University | Thermal and Rheological Behavior of PP/IMWCNT Nanocomposites | | 4:30 PM | | |
| 9-6 | Maltby | Adam | Croda | Improved Antifogging Agents for PP Homopolymer Food Contact Films | | 5:00 PM | | |
| Session 10 - Tuesday Afternoon | | | | | | | | |
| | | | FlexPack | Materials and Methods - Session B: Processes and Packaging | Gagan Saini* | Tues PM | | |
| 10-1 | Plavnik | Gene | Heat Technologies, Inc | Beyond the Barriers of Performance through Sound | SALON C | 1:30 PM | Session 8,9,10, & 11 are Concurrent | |
| 10-2 | Choi | Dong | Sungan Printed Electronics Lab | R2R Coating System for Printe4d Organic Solar Cell | | 2:00 PM | | |
| 10-3 | Dunn | Thomas | | Alcohol Vapor Degradation of Easy-Open Seals | | 2:30 PM | | |
| | | | | | | Break | 3:00-4:00 | |
| 10-4 | Oliver | Gary | EDI | Packaging Film Fabrication Methods and Impact on Barrier | | 4:00 PM | | |
| 10-5 | Waller | Paul | Plastics Touchpoint Group | Advanced Techniques to Detect and Minimize Multilayer Gauge Variation- Has Extrusion Technology Kept up with Gauging Techniques | | 4:30 PM | | |
| 10-6 | Sticha | Neil | Oakland Instruments | Advanced Techniques to Detect and Minimize Multilayer Gauge Variation- Has Extrusion Technology Kept up with Gauging Techniques | | 5:00 PM | | |
| Session 11 - Tuesday Afternoon | | | | | | | | |
| | | | TPM&F | Advancements in Polyolefin Foams | Ananda Chatterjee* | Tues PM | | |
| 11-1* | Rego | Manu | Dow Chemical Company | Expanding the Envelope of Foamed Polyolefin Elastomers | SALON D | 1:30 PM | Session 8,9,10, & 11 are Concurrent | |
| 11-2 | Sopher | Steven | JSP (Japan) | Weight Reduction Solutions and Performance Improvements using Expanded Polyolefin Bead Foams | | 2:00 PM | | |
| 11-3 | Hoffmann | Marcus | Simona AG (Germany) | Worldwide Tank Building Applications using PP Sheets: the Effect of Foaming on Properties | | 2:30 PM | | |
| | | | | | | Break | 3:00-4:00 | |
| 11-4 | Andersen | Paul | Coperion Corporation | Feed Enhancement Technology for Twin-Screw Compounding of Low Bulk Density Material | | 4:00 PM | | |
| 11-5 | Ohshima | Masahiro | Kyoto University (Japan) | Controllability of Cellular Structure of Polypropylene Foams by Core-Back Foam Injection Molding | | 4:30 PM | | |
| 11-6 | Phillips | Edward | E-Beam Services, Inc | Radiation Processing of Polyolefins: High Melt Strength and Foamability | | 5:00 PM | | |
| Session 12 - Wed Morning Feb 29 | | | | | | | | |
| | | | South Texas Section | Catalysis and Process Advances | Bill Beaulieu | Wed AM | Dinner on your own Speaker's Breakfast 7-9AM, Salon 10 | |
| 12-1 | Eric | Schwertfeger | Chevron Phillips Chemical Co | Long Chain Branching in PE Made With Cr/Silica Catalyst | SALON A | 8:00 AM | Sessions 12, 13, & 14 are Concurrent | |
| 12-2 | Thiele | Charles | VACTEC | Design Considerations to Eliminate Angel Hair | | 8:30 AM | | |
| 12-3 | Moshe | Kol | Tel Aviv University | Highly Isotactic Polypropylene by Newly Designed C1-Symmetric Octahedral Complexes* | | 9:00 AM | | |
| | | | | | | Break | 9:30-10:00 | |
| 12-4 | Jean | Chabardes | Ineos | Proposal Manager Innovene S | | 10:00 AM | | |
| 12-5 | Raghu | Menon | Albemarle | Albemarle's ActivCat(TM): Activation Technology that Enables Polyolefin Producers to adopt Metallocene Catalysts | | 10:30 AM | | |
| 12-6 | Balaji | Singh | Chemical Market Resources | Porter's Five Factor Analysis of Ideal Polyolefin Catalyst Company - Lessons Learned | | 11:00 AM | | |
| Session 13 - Wednesday Morning | | | | | | | | |
| | | | PMAD | Advances in Polyolefin Modification | John Osby | Wed AM | Speaker's Breakfast 7-9AM, Salon 10 | |
| 13-1 | Grangette | Michel | Daikin | DA910: Polymer Processing Aid for Resin Producers | SALON B | 8:00 AM | Sessions 12, 13, & 14 are Concurrent | |
| 13-2 | Tanji | Naoko | Akeda/Armfin | Ultimate Nucleation Technology for Durable and Non-Durable Polypropylene Applications | | 8:30 AM | | |
| 13-3 | Yu | Jiong | BASF | Synergistic Effect of Irgaclear XT 386 and Organic Pigment in Polypropylene | | 9:00 AM | | |
| | | | | | | Break | 9:30-10:00 | |
| 13-4 | | | | | | | 10:00 AM | |
| 13-5 | | | | | | | 10:30 AM | |
| 13-6 | | | | | | | 11:00 AM | |
| Session 14 - Wednesday Morning | | | | | | | | |
| | | | FlexPack | Responsibility and Stewardship: Environmental, Health and Safety, Sustainability and Related Concerns | Jessica Bodine | Wed AM | Speaker's Breakfast 7-9AM, Salon 10 | |
| 14-1 | Polich | Kelly | Dow | Sustainability from Start to Finish: The Lifecycle Impacts of Plastic Packaging | SALON C | 8:00 AM | Sessions 12, 13, & 14 are Concurrent | |
| 14-2 | Herran | Vince | SealedAir | Journey to Zero Landfill | | 8:30 AM | | |
| 14-3 | Sahnoune | Abdelhadi | ExxonMobil | Life Cycle Assessment of Metallocene Polyethylene in Heavy Duty Bags | | 9:00 AM | | |
| | | | | | | Break | 9:30-10:00 | |
| 14-4 | Keithline | Jeffery | Keller & Heckman | An Up-date with respect to developing global regulatory food contact requirements | | 10:00 AM | | |
| 14-5 | Keithline | Jeffery | Keller & Heckman | Protecting Intellectual Property rights in the age of open innovation | | 10:30 AM | | |
| 14-6 | Keithline | Jeffery | Keller & Heckman | Q&A: Using Law and Science to respond to Regulatory Challenges | | 11:00 AM | South Texas Conference Planning Luncheon 12 2PM Campobello Room | |

TENTH INTERNATIONAL CONFERENCE ON FOAM MATERIALS & TECHNOLOGY
CO-SPONSORED BY THE SPAIN SECTION & TPM&F DIVISION
THE SOCIETY OF PLASTICS ENGINEERS

September 12-13, 2012
Barcelona, Spain

New materials, processes, equipment and foaming agents are being continually developed for foam applications. Interest in finding new polymers and foaming agents for foam applications is one of the top priorities for foam manufacturing industries. There is also a great interest in developing environmentally safe methods to manufacture polymeric foams.

The FOAMS® 2012 conference is planned to address the above key issues with a collection of groundbreaking presentations by leading foam researchers in industry and academia. It will feature world-renowned speakers presenting technical papers on innovations in foam processing, novel blowing agents, micro and nanocellular foams, sustainability in foams, biodegradable foams, foamed nanocomposites, etc. with special emphasis on industrial applications. The FOAMS® 2012 conference will be held on September 12 and 13, 2012 for 2 days in Barcelona (Spain). This conference is the premier forum for presentations of new developments in foaming technologies due to the diversity of attendees.



As an accomplished technical and business leader in polymeric foams, we invite you to give an oral presentation in this conference. Please consider contributing an original paper on technical or business aspects of your recent, significant developments in foaming of plastics. If you agree to submit a paper for this conference, please review the attached page carefully, and send me us the completed Intent to Present Form by e-mail, mail or fax. Thank you.

TECHNICAL PROGRAM COMMITTEE, FOAMS® 2012

Miguel Angel Rodriguez-Perez, CellMat Lab, University of Valladolid, Conference Chair, Spain.

Miguel Muñoz, Conference Co-Chair, Editec S.A

Miguel Angel Rodriguez-Perez, Vipin Kumar (University of Washington) and Neil Witten (Crosslink Technical Consulting), Technical Program Chairs.

This 2-day conference on foams will feature world-renowned speakers presenting on the following key topics that are important to the foams industry. Biodegradable foams; Innovation in Foams; Sustainable Foams; Micro and Nanocellular foams; Foams for Structural Applications; Nanocomposite Foams; Novel Foaming Technologies

The following is the timetable for the FOAMS® 2012 conference:

May 15, 2012 – Complete and mail (or email or fax) the Intent to Present Form.

An abstract of 100 words minimum that describes your intended paper is required.

June 1, 2012- Notification of accepted papers to all authors

July 1, 2012 –First version of the paper to be sent to Miguel Angel Rodriguez-Perez

August 1, 2012– Final update of the paper

September 12-13, 2011 - FOAMS®2012 Conference

The submitted papers will be carefully reviewed. The criteria for selection of papers will be based on significant developments that will bring benefits to the foam industry with highest quality and originality. The best papers will be selected and announced on June 1. If you have any questions regarding the abstract, topics, or deadlines, please contact us. We look forward to your participation. Thank you.



INTENT TO PRESENT FORM

Title of Paper: _____

1. Principal Author & Address: _____

Phone/Fax/E-mail: _____

2. Secondary Author & Address: _____

Phone/Fax/E-mail: _____

An Abstract (*100 words minimum*) is required with the submission of this form. Please type below or use a separate sheet. The **criteria** for selection of papers will be based on **significant developments that will bring benefits to the foams industry with highest quality and originality.**

Conference web site: <http://www.4spe.org/conferences/foams-2012-conference>

PLEASE SEND THE COMPLETED FORM TO:

Miguel Angel Rodriguez-Perez
University of Valladolid
Cellular Materials Laboratory (CellMat)
Condensed Matter Physics Department, Faculty of Science
47011 Valladolid, Spain
Phone: +34 983 184035
Fax: +34 983 423192
E-mail: marrod@fmc.uva.es



TPM&F Related Events @ ANTEC®

TUESDAY APRIL 3, 7:00 P.M.
BOD Meeting at Hilton Orlando

TUESDAY APRIL 3, 5:00 P.M. TO 5:30 P.M.
Business Meeting at the Orange County Convention Center,
Room S320D,
APRIL 3, 5:30 TO 7:00 P.M. (SAME ROOM S320D).
Members Reception at the Orange County Convention Center

M35 MONDAY AFTERNOON • APRIL 2

Foams in Molded Parts and Fibers

1:30 Dynamic Behavior and Experimental Validation of Cell Nucleation and Growing Mechanism in Microcellular Injection Molding Process

Chao-Tsai Huang, CoreTech System (Moldex3D)

2:00 Polymer Nanocomposite Foam for Textile Applications
Shu-Kai Yeh, National Taipei University of Technology

2:30 Study of Producing Microcellular Injection Molded Parts with Improved Surface Quality

Lih-Sheng Turng, University of Wisconsin-Madison

3:00 The Influences of Processing Temperatures and Nucleating Agent in Foaming of a Thin-Walled Injection Molded Part

Davoud Jahani, University of Toronto

3:30 Polymer Nanocellular Fibers via Supercritical Carbon Dioxide Based Extrusion Foaming

Wenyi Huang, Ohio State University

4:00 Pull and Foam - Injection Molding Method: Foamed Ribs for Stiffening Plane Components

Mike Tromm, University of Kassel

4:30 Extrusion-Calendering of Foamed and Unfoamed Wood/Plastic Composites

Denis Rodrigue, Université Laval

T16 TUESDAY MORNING • APRIL 3

New Materials and Additives

8:00 Moisture Resistant Technologies for Wood Composites
Jeffrey Cernohous, Interfacial Solutions

8:30 Evaluation of Long-Term Performance of GFRP for Hot Water Application by Injection Molding
Masahiro Muto, Kyoto Institute of Technology

9:00 Gas Permeability of Poly (4-Methylpentene-1) in a Confined Nanolayered Film System
Guojun Zhang, Case Western Reserve University

T16 TUESDAY MORNING • APRIL 3 - CONTINUED

New Materials and Additives 9:30 One- and Three-Dimensional Alignment of Graphene Using New Fabrication Strategies for Thermally Conductive LLDPE-Graphene Composite

Muhammad Omer Khan, University of Toronto

10:00 High Performance Metallocene Based on SK Innovation's Nexlene™ Technology

Sewon Oh, SK Innovation

T35 TUESDAY AFTERNOON • APRIL 3

PLA Foam

1:30 The Effect of Polyhydroxybutyrate-co-valerate (PHBV) Content on Thermal, Rheological, Mechanical Properties and Foaming Behavior of Polylactic Acid (PLA)
Qi Guan, University of Toronto

2:00 A Study on the Acoustic Performance of Bio-Based Composite Foams of PLA and PHBV

Shahzad Ghaffari Mosanenzadeh, University of Toronto

2:30 Melt Fracture Behavior of PLA Foamed Using Different Die Entry Angles

Mo Xu, University of Toronto

3:00 Feasibility of Double Crystal Melting Peak Generation in PLA for Expanded PLA Beaded Foams

Mohammadreza Nofar, University of Toronto

3:30 Effect of Various Additives (Talc, Nanoclay, and Nanosilica) on Extrusion Foaming of PLA Through Crystallization

Mohammadreza Nofar, University of Toronto

4:00 Swelling of PLA Melt Due to CO₂ Dissolution
Syed Mahmood, University of Toronto

4:30 Thermal and Thermomechanical Behavior of Injection Molded Solid and Microcellular Polylactic Acid (PLA)/ Polyhydroxybutyrate-valerate (PHBV) Blends
Haibin Zhao, South China University of Technology

TPM&F Related Events in ANTEC® 2012 Conference (continued)

W16 WEDNESDAY MORNING • APRIL 4

Polyolefin Foams

8:00 Dynamic Properties of Crosslinked Polyolefin Foams
Kyle Kummer, The Dow Chemical Company

8:30 Isothermal Crystallization-Induced Foaming of Polypropylene Under High Pressure Carbon Dioxide
Anson Wong, University of Toronto

9:00 Solubility and Diffusivity of Carbon Dioxide in polypropylene/Micro-Calcium Carbonate Composites
Jie Chen, East China University of Science and Technology

9:30 Strategies for Achieving High Expansion Foams of Crosslinked Ethylene-vinyl Acetate (EVA) Using a Chemical Blowing Agent
Nan Chen, University of Toronto

10:00 Foaming of Poly(ethylene-co-octene) with Supercritical Carbon Dioxide Across Its Melting Range
Raymond Chu, University of Toronto

W22 WEDNESDAY AFTERNOON • APRIL 4

ETP Foams

1:30 Extrusion Foaming Behavior of PET
Mohamad Reza Barzegari, University of Toronto

2:00 Falling Dart Impact Behavior of Polycarbonate and Microcellular Polycarbonate Foams
Martin Rohleder, University Kassel

2:30 Effect of Process Variables on the Properties of Supercritical CO₂ Foamed PS/Graphite Nanocomposite Foam
Shu-Kai Yeh, National Taipei University of Technology

3:00 Batch Foaming Behavior of TPU Material
Kun-Chang Lin, Far East University

3:30 Biomass Materials, shape Memory Polyurethane
Jia Hong Li, Plastics Industry Development Center

4:00 Development of Bead Foaming Technology for High Performance PEEK 1 Thermal Analysis
Hui Wang, Jilin University

Communication Chair Report - New Website

www.SPETPMF.com

In an effort to expand our Communication efforts, the TPM&F division is working on developing a website that will include information about our division, awards, media center, education, SPE membership information, newsletters, future events/conferences, and special links for resources available including our TPM&F Linked-In site. Our website team consists of Perry Vadhar, Theresa Healy, Xiaoxi Wang, and Ajit Ranade. We have finalized the layout of the site and we are in the process of gathering content and pictures. If anyone has any "foam material" pictures that they would like included in the site, please e-mail them in jpeg format (*high resolutions -300dpi or higher*) to thealy@reedyintl.com. We anticipate going "live" with the site by the end of February 2012. The new website's address will be: www.SPETPMF.com.

– Theresa Healy



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TREASURER'S REPORT

Report for First Half of FY 2011-12 January 30, 2012

Submitted to:
Society of Plastics Engineers
Thermoplastic Materials and Foams Division
Board of Directors

Financial Summary:

FY11-12 revised budget: Income \$19,000; Expenses \$26,400. Thus, we have a budgeted deficit of \$7,400.

The budget was revised on 9/13/11 to raise the Educational Program budget by \$3000. This category is currently budgeted for \$8,000: \$1,000 for Plastivan; \$7,000 for the ANTEC[®] Student Activities Committee --- \$2,000 for a payment for the FY10-11 fiscal year and \$5,000 for the FY11-12 fiscal year.

First half of FY actual transactions are: Income \$8,834.45; Expenses \$7,730.33.

Most of our net worth resides in the SPE Investment Program. In the first half of the fiscal year, this paid out a 3% interest rate. As of today, the interest rate remains at 3%, but is subject to change before the end of the fiscal year.

Contact me for any reimbursements. Don't forget to opt out of sales tax due to our IRS 501(c)(3) non-profit status. See me ahead of time for help with that.

– **Maxwell J. Wingert**

mw4spe@yahoo.com

| | FY 2009-10 | | FY 2010-11 | | FY 2011-12 | |
|----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | 6/30/10 Actual | Budget | 6/30/11 Actual | Budget | 12/31/11 Actual | Revised budget |
| INFLOWS | | | | | | |
| Interest & Dividends | \$ 5.40 | \$ 50.00 | \$ 0.47 | \$ - | \$ - | \$ - |
| SPE Investment Program | \$ 2,954.17 | \$ 2,000.00 | \$ 4,055.17 | \$ 2,000.00 | \$ 2,091.41 | \$ 4,000.00 |
| Sponsorship | \$ - | \$ 1,000.00 | \$ 500.00 | \$ 1,000.00 | \$ - | \$ 500.00 |
| Conference - FOAMS | \$ 7,918.54 | \$ 8,000.00 | \$ 8,012.45 | \$ 8,000.00 | \$ 5,962.66 | \$ 8,000.00 |
| Conference - Polyolefins | \$ 6,364.13 | \$ 6,000.00 | \$ 5,448.30 | \$ 6,000.00 | \$ - | \$ 5,500.00 |
| Member-Get-A-Member | \$ - | \$ - | \$ 75.00 | \$ - | \$ - | \$ - |
| SPE Rebate | \$ 770.41 | \$ - | \$ 1,165.59 | \$ 2,000.00 | \$ 780.38 | \$ 1,000.00 |
| Total Inflows | \$ 18,012.65 | \$ 17,050.00 | \$ 19,256.98 | \$ 19,000.00 | \$ 8,834.45 | \$ 19,000.00 |
| OUTFLOWS | | | | | | |
| ANTEC expenses | \$ 2,500.00 | \$ 1,500.00 | \$ 3,480.00 | \$ 2,000.00 | \$ - | \$ 4,000.00 |
| Best paper awards | \$ 268.69 | \$ 2,400.00 | \$ 11.58 | \$ 500.00 | \$ 57.02 | \$ 200.00 |
| Board Meeting | \$ 2,968.28 | \$ 4,500.00 | \$ 2,652.11 | \$ 4,000.00 | \$ 676.28 | \$ 3,500.00 |
| Councilor Travel | \$ 1,301.33 | \$ 1,500.00 | \$ 425.98 | \$ 1,500.00 | \$ - | \$ 1,500.00 |
| Educational Programs | \$ 500.00 | \$ 3,000.00 | \$ 1,000.00 | \$ 1,350.00 | \$ 7,000.00 | \$ 8,000.00 |
| General Office | \$ 62.92 | \$ 200.00 | \$ 86.10 | \$ 200.00 | \$ - | \$ 200.00 |
| Newsletter Printing/Mailing | \$ 1,951.00 | \$ 2,800.00 | \$ 1,133.00 | \$ 2,000.00 | \$ - | \$ 2,000.00 |
| Outstanding Achievement Award | \$ 35.91 | \$ 5,000.00 | \$ 2,946.18 | \$ 5,000.00 | \$ - | \$ 4,500.00 |
| Scholarships/Grants | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| SPE Foundation | \$ 2,500.00 | \$ 4,000.00 | \$ - | \$ 4,000.00 | \$ - | \$ - |
| Technical Training Seminars | \$ - | \$ - | \$ 1,650.00 | \$ 1,650.00 | \$ - | \$ 1,500.00 |
| Other expenses | \$ 2,333.99 | \$ 1,000.00 | \$ 1,788.66 | \$ 1,000.00 | \$ - | \$ 1,000.00 |
| Total Outflows | \$ 14,422.12 | \$ 25,900.00 | \$ 15,173.61 | \$ 23,200.00 | \$ 7,733.30 | \$ 26,400.00 |
| Overall Surplus (deficit) | \$ 3,590.53 | \$ (8,850.00) | \$ 4,083.37 | \$ (4,200.00) | \$ 1,101.15 | \$ (7,400.00) |
| Budget Plan | \$ (8,850.00) | \$ (8,850.00) | \$ (4,200.00) | \$ (4,200.00) | \$ (7,400.00) | \$ (7,400.00) |
| Variance from Budget | \$ 12,440.53 | \$ - | \$ 8,283.37 | \$ - | \$ 8,501.15 | \$ - |
| Ending Account Balance | \$ 145,687.15 | | \$ 149,770.52 | | \$ 150,871.67 | |

TPM&F COUNCILOR'S REPORT

November 12, 2011



This summary is included to review the highlights of the Council Meeting held in Barcelona, Spain on November 12, 2011.

EUROTEC: Attendance in Barcelona reached approximately 350.

HIGHLIGHTS FROM THE COUNCIL FLOOR

President's Remarks

President Russell Broome welcomed everyone to Barcelona. He announced that Lesley Kyle, Director of Even Management, had submitted her resignation effective November 23, 2011, and asked for a round of applause in recognition of her 10 years of service to SPE.

Financial Review

Treasurer Vijay Boolani presented the 2012 Budget to Council. It was approved as presented. The budget calls for gross income of \$4,040,000, direct expenses of \$3,922,114, and a net income of \$117,826.

Society Elections

Society elections for the 2012-2013 leadership year were held. The following were elected:

- President-elect: Jon Ratzlaff
- Senior Vice President: Dick Cameron
- Vice President: Greg Campbell
- CCOW Chair: Monika Verheij

Committee Reports

Sections Committee: Council approved placing a number of Student Chapters on Provisional or Abandoned Status.

Awards Committee: Sarah Sullinger reported the recipients of the Annual Awards, to be presented at the Hall of Fame banquet in Orlando, FL. The Fellows Election Committee and the HSM Election Committee planned to meet on December first and second, respectively, to elect members to those membership grades.

Academic Outreach: Lance Neward, Chair, reported that the committee is providing publicity for Student Chapter schools via publication of articles on the schools in *Plastics Engineering*. The first article, on Pennsylvania College of Technology, appears in the November/December 2011 issue of *Plastics Engineering*.

Officer and Staff Updates

EUROTEC®: 200 papers will be presented in 28 sessions at EUROTEC® in the coming 3 days.

ANTEC®2012: ANTEC® will be co-located with NPE April 2-4 in Orlando, Florida.

Membership Update: Tom Conklin reported that as of November 1st, membership was 15,180. This is up by 374 members for the same time period in 2010.

Avecra Database Update: Tom Conklin updated Councilors on the changes members will see when they access their membership information on line.

Next Meeting

The next meeting of the Council is a virtual meeting, scheduled for Friday, February 24, 2012.

Respectfully submitted,

– **Ashutosh H. Sharma**