

# SPE BIOPLASTICS SIG

April Newsletter, 2016



## CHAIR'S COMMENTS

Happy Spring everyone! In the last newsletter, December, 2015, I was writing about my preparing for winter and now it's time to get ready for summer and to play a little golf again. In the world of SPE, it's TopCon time. These venues provide a focus on recent technologies and what has been learned since the last year. I mentioned we would be partnering with the Upper Midwest Section for the Bioplastics Topcon 2016. The conference will be held in the newly renovated Sheraton Bloomington Hotel, which is close to the Minneapolis/St. Paul International Airport. The Section Board along with the TopCon Board has been working tirelessly to provide an educational event.

### End of My Term

This is my last writing as my second term will end at the end of ANTEC next May. I've enjoyed meeting members of this SIG over the past six years and really appreciated all the work your Board of Directors have done and will continue to do to help build and expand the SIG. It's not easy running a SIG with such distances as we conduct most of our meetings via teleconference. That's why the conferences allow us to meet personally and continue to renew our friendships. I will not be attending ANTEC 2016 as I have a busy travel schedule with our business and have asked one of the board members to run the Annual Board Meeting which will be held at ANTEC. I would encourage you to volunteer to work on the board as you will really learn how the work is done behind the scenes and will also challenge you to provide new information for the upcoming planning sessions.

Thank you and all the best to the Bioplastics SIG!

Sam McCord



## OUR MISSION

The mission of the BioSIG is “To provide a unified forum for promoting open exchange of scientific and engineering knowledge related to bioplastics materials that are either Biobased, biodegradable, or both with a sustainability emphasis.”

Areas of interest include synthesis, characterization, processing, structure-property relationships, degradation, product design and development, application development, modeling, regulations and compliance, and life-cycle analyses. To achieve its objectives, the SIG collaborates closely with other interested technical divisions of SPE and organizations to coordinate the dissemination of knowledge and understanding of bioplastics through appropriate channels.

# ANTEC 2016 Schedule

ANTEC 2016 will be held between May 23<sup>rd</sup> to May 25<sup>th</sup> at Indianapolis. Bioplastic SIG will have three sessions, Monday morning, Tuesday morning, and Wednesday morning. For more information on ANTEC please visit [www.eiseverywhere.com//ehome/127608](http://www.eiseverywhere.com//ehome/127608). Below is the schedule for each session:

<b>Monday</b>	<b>Moderator: David Grewell</b>	<b>Speaker</b>
8:30-9:00	Soy protein isolate films with improved mechanical properties via bio-based dialdehydecaboxymethyl cellulose crosslinking	Ting Zheng
9:00-9:30	Energy-efficient Processing of Rendered Animal Proteins as Value Added Bio-crosslinkers in High-Strength Thermosets	xiaoyan Yu
9:30-10:00	Reduced Post Crystallization of Polyhydroxybutyrate (PHB)	Linda Goebel
10:00-10:30	Analysis on Mechanical Properties of Poly-lactic Acid Composites with Organic-Montmorillonite by Injection Molding	Qi-Hong Liao
10:30-11:00	MECHANICAL PROPERTIES AND EFFECTS OF ADDITIVES OF CELLULOSE-PLA COMPOSITE	Hiroki Sakamoto
<b>Tuesday</b>	<b>Moderator: Douglas Hirt</b>	
8:30-9:00	Modification of the rheological and thermal properties of PLA by reactive extrusion in the presence of a multifunctional coagent	Praphulla Tiwary
9:00-9:30	DuPont's Renewably Sourced High Performance Polymers	Anna Mathew
9:30-10:00	Properties of poly(ethylene glycol)methyl ether acrylate-grafted polylactide	Mohammed Dirany
10:00-10:30	PREPARATION AND CHARACTERIZATION OF BIODEGRADABLE POLYLACTIDE/ETHYLENE METHYL ACRYLATE COPOLYMER BLENDS	Linqiong Xu
10:30-11:00	FABRICATION OF INTERCONNECTED POROUS POLY(LACTIC ACID) SCAFFOLDS BASED ON DYNAMIC ELONGATIONAL FLOW PROCEDURE, BATCH FOAMING AND PARTICULATE LEACHING	Xiang-Fang Peng
<b>Wednesday</b>	<b>Moderator:</b>	
8:30-9:00	PRODUCTION OF IN SITU MICROFIBRILLAR COMPOSITES AS A NOVEL APPROACH TOWARDS IMPROVED BIO-BASED POLYMERIC PRODUCTS	Adel Ramezani Kakroodi
9:00-9:30	Fabrication and Characterization of Bio-based PCM Microcapsules for Thermal Energy Storage	Maryam Fashandi
9:30-10:00	EFFECT OF MINERALS ON RHEOLOGICAL AND THERMAL BEHAVIOR OF PLA/PMMA BLENDS	Mauricio Gonzalez
10:00-10:30	MECHANICAL PROPERTY AND FRACTURE ANALYSIS OF WOOD POWDER/PP COMPOSITE MOLDED BY INJECTION MOLDING	Zhiyuan Zhang
10:30-11:00	MODERN FABRICATION OF POLY(LACTIC ACID) NANOFIBERS BY COTTON CANDY METHOD	Supaphorn Thumsorn

# 2016 BIOPLASTIC MATERIALS TOPCON & TUTORIAL



**April 19-21, 2016**  
Sheraton Bloomington  
5601 W 78th St,  
Minneapolis, MN 55439

NAME: \_\_\_\_\_  
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**Bioplastics Tutorial: April 19, 2016**  
**Bioplastics Conference (TOPCON): April 20 - 21, 2016**

**Tutorial Registration** *includes tutorial handouts, boxed lunch and coffee breaks.*

**Conference Registration** *includes Conference Proceedings, free admission to all Exhibits. Meals include all lunches, coffee breaks and Networking Reception.*

**Choose One of the Following:**

**1. ATTEND BOTH TUTORIAL (April 19, 2016) & CONFERENCE (April 20 - 21)**

**Advance Registration (Deadline: March 22, 2014)**

- SPE Member Rate - \$650
- New Member Rate with SPE Membership - \$759 (*SPE New membership fee \$109 Included*)
- Non-member Rate without SPE Membership- 750

**After March 22, 2016 or Onsite**

- SPE Member Rate - \$750
- New Member Rate with SPE Membership - \$859 (*SPE New membership fee \$109 Included*)
- Non-member Rate without SPE Membership- \$850

**2. TUTORIAL-ONLY REGISTRATION (Not attending conference)**

**Advance Registration (Deadline: March 22, 2016)**

- SPE Member Rate - \$195
- New Member Rate with SPE Membership - \$304 (*SPE New membership fee \$109 Included*)
- Non-member Rate without SPE Membership- \$250

**After March 22, 2016 or Onsite**

- SPE Member Rate - \$250
- New Member Rate with SPE Membership - \$359 (SPE New membership fee \$109 Included)
- Non-member Rate without SPE Membership- \$300

**3. ATTEND CONFERENCE-ONLY REGISTRATION (Not attending tutorial session)  
Advance Registration (Deadline: March 22, 2016)**

- SPE Member Rate - \$495
- New Member Rate with SPE Membership - \$604 (SPE New membership fee \$109 Included)
- Non-member Rate without SPE Membership- \$595

**After March 22, 2016 or Onsite**

- SPE Member Rate - \$550
- New Member Rate with SPE Membership - \$659 (SPE New membership fee \$109 Included)
- Non-member Rate without SPE Membership- \$650

**4. Student (non-speaker) CONFERENCE-ONLY (Not attending tutorial session)**

- SPE student member Flat rate - \$100
- Non-SPE student rate - \$131 (SPE student membership fee \$31)

**5. Emeritus**

**Advance Registration (Deadline: March 22, 2016)**

- Both tutorial + Conference Rate - \$325
- Tutorial only Rate - \$100
- Conference only Rate - \$250

**After March 22, 2016 or Onsite**

- Both tutorial + Conference Rate - \$375
- Tutorial only Rate - \$125
- Conference only Rate - \$275

**6. Speaker/Moderator/Student-poster (Not attending tutorial session))**

- FREE

**Authorized Signature:** \_\_\_\_\_

**Date:** \_\_\_\_/\_\_\_\_/\_\_\_\_ **Total Payment in US\$** \_\_\_\_\_

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**Online registration:** <https://www.eiseverywhere.com/ehome/130808>

# 2016 BIOPLASTIC MATERIALS TOPCON SCHEDULE

- Keynote speeches: Dr. Ramani Narayan, Michigan State University and Dan Sawyer, NatureWorks LLC
- 5 papers on Additive Manufacturing/3D Printing
- 20 technical presentations from leading academics and companies on biopolymers and sustainability
- 6 student posters
- Optional 1 day tutorial session to learn the basics

April 20 -Time	Speaker, Company & Presentation Title
8:00 - 8:30 am	Registration open
8:30 - 8:40 am	Bioplastics TOPCON Chair: Welcome
8:40 - 9:10 am	Dr. Debbie Schneiderman, U of Minnesota - Functional Aliphatic Polyesters from Renewable Resources
9:10 - 9:40 am	Dr. Margaret Sobkowicz Kline, U Mass Lowell - Synthesis of Biobased Poly(butylene-co-hexane succinate) for Coating Applications
9:40 - 10:10 am	Dr. Doug Hirt, Clemson U - PBSA: Strengths and Weaknesses
10:10 - 10:30 am	Break, Tabletop & Networking
10:30 - 11:00 am	Bob Montgomery, Genarex - Improving Thermal Stability in Biobased Additives for Polymer Compounds
11:00 - Noon	Key Note Speaker: Dr. Ramani Narayan, Michigan State U -Understanding biodegradability – the science, the standards, the hype & misuse and true value proposition
Noon - 1:30 pm	Lunch, Tabletop & Networking
1:30 - 2:00 pm	Thomas J Pitzl, BASF - Biodegradable Polyester Ecoflex & Ecovio
2:00 - 2:30 pm	Dr. Shilpa Manjure and Michael Annan, NTIC- A New Technique to Benchmark Performance of PLA Cutlery
2:30 - 3:00 pm	Steve Sopher, JSP - Properties and Applications for Expanded PLA (Polylactic Acid) Particle Foams
3:00 - 3:30 pm	Break, Tabletop & Networking
3:30 - 4:00 pm	Dr. Wei Zheng, U of Wisconsin Stout - A "Green" Thermoset Versus Polylactic Acids
4:00 - 4:30 pm	Augie Machado, Leistritz - Melting Efficiency Performance for Various Polylactide Resins in a Co-rotating Intermeshing Twin Screw Extruder:
4:30 - 5:00 pm	Keith Luker, Randcastle Extrusion Systems - 3 Dimensional Mixing An Orderly Mixer For Single Screw Compounding
5:30- 7:30 pm	Students Poster Session, Tabletop Exhibits, Networking Reception

Poster Session Schedule: April 20<sup>th</sup>, 5:30 pm to 7:30 pm

Name	Company	Title of Poster
Ashtiyani, Samaneh	Michigan State University	Compost Disintegration of Biodegradable Polymers for Packaging Applications
Bote, Sayli	Michigan State University	Synthesis of biobased polyols from soy meal and its application in polyurethane rigid foam
Dhavale, Prachi	University of Massachusetts - Lowell	Novel Silk Fibroin Scaffold for bone graft applications
Giri, Preetam	Michigan State University	Structure-Property Relationships of Modified Polylactic Compounds
MacDowell, Hugh	Michigan State University	Design and Synthesis of Polydimethylsiloxane Polyester Polyol that Contains Biobased Content for Polyurethane Foam Applications
Tambe, Chetan	Michigan State University	Novel biobased elastomers by reactive blending of modified natural oil and polysiloxanes

DAY 2: April 21<sup>st</sup>

April 21 - Time	Title of Presentation
8:00 - 8:20 am	Registration
8:20 - 8:30 am	Bioplastics TOPCON Chair: Opening Remarks & House Keeping
8:30 - 9:00 am	Robert Joyce, Innovative Plastics & Molding - 3D Printing Natural Fiber Filled PolyOlefin's
9:00 - 9:30 am	Bryan Zahner, Essentium Materials OPTIMIZATION OF BIO-BASED FILAMENT: INNOVATIVE MATERIALS FOR FUSED FILAMENT FABRICATION ADDITIVE MANUFACTURING
9:30 - 10:00 am	Edwin Tam, Teknor Apex - 3D Printing & Coloring PLA: Compounder Perspective
10:00 - 10:30 am	Break, Tabletop Display & Networking
10:30 - 11:30 am	Key Note Speaker: Dan Sawyer, NatureWorks - 3D Printing Polylactic Acid
11:30 - 12:00 pm	Dr. Kelvin Okamoto, Green Bottom Line - ASTM D20 Committee Bioplastics & Biodegradable Update
12:00 - 12:30 pm	Dr. Itai Pelled, TIPA - New Barrier Layers for Biocompostable Films and Laminates Section – Compostable plastics
12:30 - 1:30 pm	Lunch - Net working
1:30 - 2:00 pm	Dr. David Grewell, Iowa State U - Interfacial Healing of PLA
2:00 - 2:30 pm	Dr. Andrew Cal, Mango Materials - Naturally Occurring PHA Biopolymer from Bio-Methane: Commercial Update
2:30 - 3:00 pm	Danny Mishek, Self Eco - Product Development for Plant-based Polymers
3:00 - 3:10 pm	Edwin Tam, Teknor Apex - Closing Remarks

# 2016 BIOPLASTIC MATERIALS TOPCON & TUTORIAL

## SPONSORSHIP FORM



**April 19-21, 2016**  
Sheraton Bloomington  
5601 W 78th St,  
Minneapolis, MN 55439

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### All sponsorships do not include participation in the Bioplastic Materials TopCon.

- Gold: \$2,000\*: 2 free admission to conference ONLY not tutorial, tabletop in exhibition, logo on flyer, website and display at conference event
- Silver/Tabletop: \$1,000\*: 1 free admission to conference ONLY not tutorial, logo on flyer, website and signs at conference event, tabletop in exhibition
- Bronze: \$500: No free admission to conference nor tutorial, logo on flyer, website and signs at conference event, literature to be handed out at event
- Breakfast coffee and break coffee/drinks: \$250 (display at conference event only).

Exhibition open from Wednesday April 20 10:00 AM through Thursday April 21 1:00 PM. Exhibitors' Reception held Wednesday April 20 evening. All breaks held in exhibition room.

**\*Bioplastic Materials 2014 Exhibitors/Silver Sponsors receive a \$250 discount.**

Total Payment in US\$ \_\_\_\_\_

Online registration: <https://www.eiseverywhere.com/ehome/130808>

### Hotel:

Sheraton Bloomington, 5601 W 78th St, Minneapolis, MN 55439  
Please call hotel directly at [\(952\) 835-1900](tel:9528351900) and ask for  
Bioplastic Materials TopCon special rate \$149 per night (single-rate) + tax,  
**Deadline for special rate: March 28, 2016.**

**Contact:** Edwin Tam, Sponsor Chair, [etam@teknorapex.com](mailto:etam@teknorapex.com), (339) 222-8076

**Co-sponsored by SPE Bioplastics Special Interest Group &  
SPE Upper Midwest Section**





## MEET YOUR BOARD

These are the working members of your Board of Directors and bring a strong commitment and knowledge in guiding our SIG into the future.

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