

News



The Society of Plastics Engineers

ENGINEERING PROPERTIES & STRUCTURE DIVISION

April 2014

Chairperson's Report



Greetings Fellow EPSDIV Members!

It's almost that Time!

A very fine conference agenda has been prepared to benefit everyone in attendance at ANTEC-2014 and I personally thank our TPC Co-chairs, Babli Kapur and Sharon Wu along with their support team members for their mobilizing energy, unwavering commitment, sensible solutions, and collective fortitude in executing this much anticipated EPSDIV program.

Welcome to our three new 'Board' members, Drs. Paul Hans, Oomman Thomas, and Sharon Wu. Congratulations to our three re-elected 'Board' members, Drs. Rajen Patel, Morali Rajagopalan and Paul Rothweiler. Welcome back!

I extend much thanks to our Chair-Elect Jason Lyons for coordinating the 'Board' elections and championing our division in the 2014 Pinnacle Silver Award.

Welcome New and Returning Board Members!

Important EPSDIV Activities at ANTEC 2014

The following EPSDIV meetings are scheduled to take place at the Rio All-Suite Hotel & Casino

- The Board meeting will take place on April 27th, Sunday, 4:00-7:00 PM, Room # Tropical AB (*Please provide your own refreshments*)
- The TPC meeting is scheduled for April 29th, Tuesday, 11:30 AM-1:00 PM, Room # Pavilion 10. (*Please feel free to bring your lunch to this meeting. No lunch will be provided*)
- The EPSDIV, PMAD, & Vinyl Plastics Division will co-host a wine and cheese reception on April 29th, Tuesday, 5:30-7:00 PM, Room # to be determined. Between 6:00-6:20 PM each division will successively use 10 minutes to conduct division related business, e.g., give out awards, special recognition, etc. The intent of a joint reception is primarily to boost attendance, enable networking opportunities and make more economic use of the available funds.

Congratulations go to Sadhan Jana, a recipient of the Honor Service Member (HSM) Award and Ashish Sukhadia who was elected as a 2014 SPE Fellow. Their outstanding accomplishments are a credit to our division.

Last but certainly not least, I would like to share my sincere appreciation for the long-standing, faithful, supportive, and professionally responsive contributions made by Emmett Crawford, Treasurer, Steve Driscoll, Secretary, and Dan Liu, Awards Chairman, on behalf of our entire division.

I'll see you soon in Vegas!

John S. Trent

ANTEC® 2015

MARCH 23-25, 2015

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TPC Co-Chairpersons
Mridula (Babli) Kapur and Sharon Wu

Preparation for the ANTEC 2014 conference, Las Vegas, April 28th - April 30th is in full swing.

The EPSDIV will host nine technical sessions at ANTEC 2014. Of the nine sessions, six are dedicated to submitted papers on core EPSDIV focus areas. Each of the six technical sessions will be anchored by keynote speakers from either industry or academia. The remaining three sessions are special sessions on diverse subjects ranging from recognition of individuals, who have made significant contributions to the scientific arena, to new technology-material advancement. Invited speakers, experts in their own right, have been invited to present at the special sessions.

Details of the program are as follows,

- **M7: Polymer Morphology Characterization & Testing, Monday, April 28th, 8:30-11:00 AM**
AM Moderators: John Trent and Duane Simonson
Keynote Speaker: Lora Liang, Principal Sci/Engineer, Mondelez International, "Flexible Food Packaging Innovation - A Brand Owners' Perspective"
- **M8: Structure-Property Relationship, Monday, April 28th, 8:30-11:00 AM**
Moderator: Paul Rothweiler
Keynote Speakers:
 - Hari Reddi, VP R&D-Curwood Inc, Bemis Company, "Tailoring Barrier Properties for Advanced Packaging Applications"
 - Jeff Wooster, Global Sustainability Manager, the Dow Chemical Company, "Sustainability for Plastic Packaging – Why it matters and what to do about it"

- **M27: Nanostructures, Properties, and Applications, Monday, April 28th, 1:30-5:30 PM**

Moderators: Sadhan Jana and Daniel Liu

Keynote Speaker: SPE International Award Winner Avraam I. Isayev, Distinguished Professor Department of Polymer Engineering, the University of Akron, "Environmental Sustainability through Polymer Processing"

- **M28: EPSDIV & Pipes & Fittings SIG Joint Session - Symposium to Honor Prof. Alexander Chudnovsky, Monday, April 28th, 1:30-5:30 PM**

Professor Chudnovsky is widely recognized for his novel contributions to fracture mechanics, materials durability and accelerated lifetime testing.

Moderators: Hoang Pham and Oomman Thomas

Invited Speakers:

- Kalyan Sehanobish, Senior Fellow, the Dow Chemical Company, "Carbon Fiber Composites in Automotive"
 - Reinhold Lang, Head, Institute of Polymeric Materials and Testing, JKU Linz, Austria, "Accelerated Testing of PE-HD Materials for Pressure Pipe Applications - A Polymer Science Approach to Material Screening, Classification and Certification"
 - Arnold Lustiger, Senior Research Scientist, ExxonMobil Research & Engineering, "The Role of Tie Molecules in Slow Crack Growth Resistance of Polyethylene"
 - Alan Lesser, Professor, Polymer Science & Engineering Dept, UMASS Amherst, "Molecular Aspects of Fracture and Healing in Glassy Polymer Thermosets"
 - Clive Bosnyak, Chief Scientific Officer, Molecular Rebar Design, "Nanocomposites with Discrete, Well-Dispersed Multiwall Carbon Nanotubes"
 - Byoung-Ho Choi, Assoc Professor, Korea University, "A Parametric Study of the Crack Growth Behavior of High Density Polyethylene"
 - Alexander Chudnovsky, UIC Distinguished Professor Emeritus, "Modeling of the Time Dependent Properties of Plastics in Intrinsic Material Time Frame"
- **T6: EPSDIV & Electrical & Electronic SIG Joint New Technology Session - "Polymers in Microelectronics and MEMS", Tuesday, April 29th, 8:00-11:00 AM**

The continuous, fast paced advancement in microelectronics has impacted almost every aspect of our lives. This dynamic industry is propelled by constant technological evolution in which polymers have played a critical role. The rapid downsizing of microelectronics as well as the emerging of MEMS devices and flexible organic electronics continues to pose challenges for polymer material science.

Moderator: Sharon Wu

TPC Report Continued on next page

Invited Speakers:

- Mark G. Allen, University of Pennsylvania, "The Growing Use of Polymeric Materials In Micro- and Nanofabrication Applications"
- Yong-Kyu Yoon, University of Florida, "Fabrication of Nano fibrous 3-D Polymeric Microstructures and Their Engineering Applications"
- Paul Yung, Celanese US, "Advances in High Performance Polymers for Mobile Devices"
- Donggang Yao, Georgia Institute of Technology, "Fabrication and Mechanical Behavior of Interconnected Porous Elastomers"
- Jun Wang, Ecole Polytechnique de Montreal, Canada, "Hierarchically Porous Polymeric Materials From Ternary Polymer Blends"
- Weijun Zhou, The Dow Chemical Company, "Molecular Engineering of Block Copolymers for Display and Lighting Applications"

• **T7: Polymer Modeling, Tuesday, April 29th, 8:00-10:30 AM**

Moderators: Himanshu Asthana and Brian Grady

Keynote Speaker: Hsinjin (Edwin) Yang, President Pioneer Scientific Solutions, Inc., Illinois, "How to Select the Performance Property for Predicting Service Life of Polymeric Products"

• **T27: EPSDIV & Vinyl Division Joint Session - Don Witenhafer Memorial Symposium, Tuesday, April 29th, 1:30-5:00 PM**

Donald Edward Witenhafer passed away Friday, September 20, 2013. He is greatly missed! Donald, a long standing member of the EPSDIV, was elected to the Plastics Hall of Fame in recognition of his pioneering technical achievements that saved the polyvinyl chloride industry.

Moderators: Luyi Sun and Stephen Driscoll

Invited Speakers:

- Luyi Sun, Associate Professor, University of Connecticut and Brian Landes, Fellow, The Dow Chemical Company, "Introductory Remarks"
- Josh Wong, Professor, University of Akron, "Adhesion of Electrospun Polymer Membranes"
- Jason Lyons, Manager, Polymer Additives R&D, Arkema Inc., "Toughening of PVC: Mechanisms and Methodologies"
- Sadhan Jana, Professor, University of Akron, "Surface Engineering of Sustainable Filler Materials in Preparation of Polymer Compounds"

- Robert Paradis, Formosa Plastics, "PVC Pellet to Powder Compounds: Key Technical Shifts"
- Sylvia Moore, Shin-Tech, "Evolution of Rigid PVC Processing"
- Emily McBride, Emerald Materials, "Don Witenhafer and Flexible Vinyl"

• **W5: Materials Processing, Fabrication and Properties, Wednesday, April 30th, 8:00-11:00 AM**

Moderator: Mike Read

Keynote Speaker: Arthur Bobovitch, VP R&D & Quality, Syfan Saad Company "Biaxially Oriented Films Produced by Double Bubble Process: Technology, Morphology, Viscoelastic Properties"

• **W6: Polymer Stability and Failure Analysis, Wednesday, April 30th, 8:00-11:00 AM**

Moderators: Mukul Kaushik and Songsan Zeng

Keynote Speaker: Christopher Li, Professor, Drexel University, "Controlling Ion Transport in Solid Polymer Electrolytes"

EPSDIV Sponsored Awards

- The 2014 SPE International Award winner is Avraam I. Isayev, Distinguished Professor, Department of Polymer Engineering, University of Akron. Prof. Avraam is the keynote speaker at the EPSDIV M27 Session, Nanostructures, Properties, and Applications, Monday, April 28th, 1:30 PM. The title of his talk is "Environmental Sustainability through Polymer Processing".
- Stephen McCarthy, Distinguished Professor, University of Massachusetts Lowell, is the winner of the 2014 SPE Annual Education Award. Prof. McCarthy will give a talk, "Novel Platforms for Targeted Drug Delivery Using Micro-Capsules", New Technology Forum: Plastics in the Hospital and the Human Body, April 29th, Tuesday, 1:30 PM.
- Best paper award: The submitted technical papers were narrowed down to the top three based on the paper review panel's input. The best paper will be selected from the top three and the best paper award given at the ANTEC conference.

ANTEC 2014 Las Vegas is for Young Professionals!



We've listened to the feedback our younger SPE members have provided from previous ANTEC conferences. So we just wanted you to know we're offering some new, fun and engaging activities at ANTEC 2014 (April 28-30), specifically for young plastics professionals:

- **Plastics Race** - See Las Vegas through the eyes of a plastics engineer as you team up and roam the Vegas Strip to compete for some awesome prizes!
- **Panel Discussion** - Participate in a lively discussion, ask your industry questions, and gain the knowledge you've been looking for including career tips and tricks relevant to you, not that generic advice you find online.
- **Celebration Dinner** - Network over an enjoyable dinner with your fellow peers, future associates and industry veterans. Prizes, awards and more!
- **Mission Possible 2.0** - Your chance to make ANTEC 2015 and SPE what you want it to be.
- **Speed Interviews** - Sharpen your skills at on-site screening visits with prospective employers.

So come on out, and see the new and improved ANTEC!



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www.antic.ws

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It is easy to think that Hollywood had this right – some 40 years ago. The script of the explosive film, *Chinatown*, was based on a California land grab that had taken place some 70 years earlier. Los Angeles was experiencing explosive growth – and along with that came an explosive thirst for water. Water, diverted from the Owens Valley, was used to feed the growing population of L.A. through the design and construction of the great Los Angeles Aqueduct. This technology had solved one problem, L.A.'s thirst, but left the farmland in the valley scrambling to find their own water supply.

Headlines from the L.A. Times this past month (110 years after the aqueduct) shows that today, everyone in southern California is thirsty. "Officials Friday said that for the first time ever, the State Water Project that helps supply a majority of Californians may be unable to make any deliveries except to maintain public health and safety. This is the first time in the 54-year history of the State Water Project that projected water supplies for both urban and agricultural uses have been reduced to zero," said California Department of Water Resources director Mark Cowin.

Thirsting for Technology

"Either you bring the water to L.A. or you bring L.A. to the water."
(Noah Cross, 1974 Motion Picture – *Chinatown*)

"This is not a coming crisis ... This is a current crisis."

Perhaps more than any other sector, clean water supply hits on all of the main socio-economic themes of poverty alleviation, environmental sustainability, private sector growth, and responsible governance. The challenge is enormous: over one billion people still lack access to safe water, and nearly two billion lack safe sanitation.

As plastics engineers, we are uniquely positioned to quench not only southern California's thirst for water, but that which exists throughout the world. We can do this by applying our unique scientific breadth in polymer technologies to dramatically improve the potability, availability, transport, and storage of water needed for human use around the world.

- There is a need for improved membranes that have higher flux, are more selective, are less prone to various types of fouling, and are more resistant to the chemical environment. These would require breakthroughs in surface modification, customization of pore morphology, and augmentation of physical/mechanical properties.
 - Another important avenue for water and wastewater treatment is in coagulation and flocculation processes. These processes rely heavily on polyelectrolyte and composite solutions that can be used to destabilize unwanted colloids, remove unwanted matter
- customization of adsorption,

charge neutralization, interparticle bridging, and stability of polymerized or composite coagulants over a wider pH range.

- And finally, there are tremendous needs in the water transport and storage infrastructure. The American Society of Civil Engineers' 2013 Report Card for America's Infrastructure shines another spotlight on the now well-documented need to reinvest and reinvent the U.S. water and wastewater infrastructure, and in the infrastructure around the world. The American Water Works Association's 2012 report, "Buried No Longer: Confronting America's Water Infrastructure Challenge," showed that more than \$1 trillion dollars will be needed over the next 25 years to repair and expand existing U.S. drinking water infrastructure. Wastewater infrastructure needs are thought to be similar. In most cases, the water systems that serve communities have operated reliably for several decades. But many of the pipes below our streets and storage tanks above ground are aging and approaching the end of their useful lives. The next generation pipes and vessels will need to be environmentally stable, lightweight, inert, and easily produced into the desired size and shape necessary for either the new or replacement installation.

Financial Report

from July 1, 2013 to February 28, 2014



SPE ANTEC® 2014

FINANCIAL REPORT FROM JULY 1, 2013 TO FEBRUARY 28, 2014

BALANCE as of July 1, 2013 **\$ 30659.24**
(cash, checking, savings, investments)

INCOME	ACTUAL
SPE Rebate	5450.00
ANTEC Sponsorships	3372.40

TOTAL INCOME	\$ 8822.40
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EXPENSES	
Newsletter Production	528.00
Councilor Travel	816.92
ANTEC	119.10
Bank Fees	27.00

TOTAL EXPENSES	\$ 1491.02
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CASH FLOW	\$ 7331.38
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ENDING BALANCE as of February 28, 2014	\$ 37990.62
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Submitted by Emmett Crawford, EPSPDIV Treasurer 2013-2014

Councilor's Report – Continued

Plastics and polymer chemistries, surface modification, physical properties, environmental stability, and commercial-scale production expertise will all be needed to face these grand challenges. To me, this is inspiring – because the enormity of the challenge defines the significance of the opportunity before us. At a time when SPE membership is driving toward more people-centered, market-based and earth-friendly solutions, it becomes evident that we excel at developing relevant new materials and technologies that can help to quench the thirst of the world. And as we become part of the grand solution, we have a powerful springboard... not only to make sure that the next generation is not thirsty for water... but to make sure it has a thirst for the technology that can make a difference for the world. Today... and tomorrow... we need scientists to do just that.

“You see, Mr. Gittes, most people never have to face the fact that at the right time and right place, they’re capable of anything.”
(Noah Cross, 1974 Motion Picture – Chinatown).

EPSPDIV Awarded Pinnacle Silver Award for 2014



CONGRADULATIONS!!!

Student and Young Professional Activities at ANTEC® 2014

Monday, April 28, 2014

Student Poster Session – 2:00-4:00pm

Plastics Race – 4:30-7:00pm

Buses depart RIO at 4:30 for the start of the RACE

Registration in advance is required.(\$10 early registration, and \$20 after March 30.)

ANTEC opening reception – 6:30-8:00pm

Tuesday, April 29, 2014

NGAB's Life Lessons for Young Professionals & Students – 9:00-10:30am

Panelists discuss tips and tricks for success in the business world

Mission Possible 2.0 –10:30AM-Noon

Your chance to provide input for the future of SPE and ANTEC® 2015

Student poster session – 2:00-4:00PM

Celebrating The Next Generation–Plastics Race awards 6:00–8:00PM

All SPE members and guests are invited to network with SPE's Student and Young Professional Members

Attendance is required to claim any prizes from the Plastics Race.(\$10 early registration-\$20 after March 30.)

Wednesday, April 30, 2014

STUDENT PLANT TOUR - Barry Plastics Corp—8:00-11:00AM

STUDENT AWARDS LUNCHEON – 12:15-2:15pm

Attendance is required to receive student travel awards.(\$5 early registration-\$20 after March 30.)

**STUDENT SPEED INTERVIEW SESSION-FREE FOR SPE
STUDENT MEMBERS! 2:30-5:30pm**

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