

News



The Society of Plastics Engineers

ENGINEERING PROPERTIES
& STRUCTURE DIVISION

February 2014

Chairperson's Report



Greetings Fellow EPSPDIV Members!

It is truly hard to believe that ANTEC-2014 is just two months away! Extensive planning and coordinating efforts are underway to insure that we have a wonderful conference in Las Vegas. Our TPC committee lead by co-chairpersons, Babli Kapur and Sharon Wu, have diligently outlined an impressive program that you can read more about on pages 6, 7 and 8.

It's time again for you to vote (see the ballot on pages 2 & 3) for three Board member nominees whose terms expire in 2014, Rajen Patel, Murali Rajagopalan and Paul Rothweiler. Additionally, there are four new nominees to the Board, Domasius Nwabunma of Saudi Aramco, Oomman (Thomas) Thomas of Kimberly-Clark, Sharon Wu of Dow Chemical Company and Paul Hans of PolyOne Corporation.

It's Time to Vote for New & Returning Board Members

You can cast your votes by replying to our Chair-elect, Jason Lyons before March 14, 2014. Acknowledgement of the new 2014-2017 EPSPDIV Board members will be announced in our April Newsletter prior to the ANTEC-2014 conference. I encourage you to come to our EPSPDIV Business Meeting and Social Hour to be held on Tuesday evening during the conference.

It's a great time to meet your Board and fellow EPSPDIV members, reconnect with friends and/or network while enjoying appetizers and refreshments. This year the SPE society is featuring new types of fun activities at ANTEC 2014 specifically designed to engage young plastic professionals. Look for their advertisement on page 5 and encourage as many young budding scientist as you can to attend this year's conference. NPE-2015 has just announced the dates and location of their International Plastic Showcase. This event will again be held jointly with SPE-ANTEC-2015 on March 23 – 27, 2015 at the Orange County Convention Center located in Orlando, FL,

USA. If you'd like to get involved with the planning for EPSPDIV's 2015 technical conference I would encourage you to attend our TPC planning meeting to be held on Tuesday at noon during our ANTEC-2014 conference. Your team work is important and essential to our divisions' productivity and value. Hope to see you there!

John S. Trent



THE
INTERNATIONAL
PLASTICS
SHOWCASE

NPE2015: The International Plastics Showcase
March 23-27, 2015
Orlando, Florida USA

INSIDE THIS ISSUE

Chairperson's Report	1
Ballot	2-3
TPC Report	4
Advertisement	5
Treasurer's Report	6
Student & Young Professional Activities	7
Board of Directors	8

Engineering Properties and Structure Division

BALLOT

Board of Directors Nominees

(Please Vote for Six of the Following Seven Candidates)

EMAIL your choices for Board members by **March 14, 2014**
to Jason Lyons at jason.lyons@arkema.com

☐ **Dr. Paul Hans**

Dr. Paul Hans is a Senior R&D Scientist employed in the Specialty Engineered Materials Business Unit of the PolyOne Corporation. He earned a B.S. in Chemistry from S.U.N.Y. College at Fredonia, and then both his M.S. and Ph.D. degrees in Polymer Science from Penn State University. Dr. Hans began his Polymer Science career at G.E. Plastics where his primary areas of research were dynamic vulcanization of rubber/thermoplastic combinations, co-polyester elastomers, non-FR PBT and PC/polyester blends. He later worked with non-oxide ceramic powders (BN & TiB₂) in several engineering capacities. Presently Paul is employed as a Product Development Scientist for PolyOne, where his responsibilities include the development of formulations for high temperature structural applications, high density materials used for x-ray shielding, lubricated/wear resistant grades, electrically conductive and long fiber materials. Previous responsibilities have included product and development lab management. Dr. Hans has nearly thirty years of experience in the field of Polymers.

☐ **Dr. Domasius Nwabunma**

Dr. Domasius Nwabunma is currently with the Consulting Services Department of Saudi Aramco, Dhahran Saudi Arabia. Previously he worked at Greene Tweed (USA), Spartech Corporation now part of PolyOne Corporation (USA), and 3M Company (USA). Dr. Nwabunma holds a Ph.D and a M.S. degree in Polymer Engineering from the University of Akron, Ohio and a B.S. degree in Chemical Engineering from the University of Lagos, Nigeria. Dr. Nwabunma has five patents, several published journals, conference articles, two book chapters, and two edited books (Polyolefin Blends and Composites). Dr. Nwabunma is currently the co-editor of Wiley's Series on Polymer Engineering and Technology. Dr. Nwabunma is a senior member of the Society of Plastics Engineers (SPE) and a member of the American Chemical Society (ACS).

☐ **Dr. Oomman (Thomas) Thomas**

Upon finishing his B.S. Oomman joined the Indian Atomic Energy Commission (IAEC). Nuclear Physics and Quantum Mechanics were the areas of research at IAEC. He completed a M. Sc. in Physics, a M. S. in Chemistry, and then attended the U of Mass at Lowell where he earned his Ph. D. in Plastics Engineering and Polymer Science. The Physics of Polymeric Liquid Crystals was the topic of his Ph.D. research. Dr. Thomas joined Dow Chemical Company in 1984 and was responsible for the development of liquid crystal colloidal dispersions for the molecular reinforcement of flexible urethane foams and elastomers. In addition, rheology, mechanical, thermal properties, and fracture mechanics of these and cross-linked liquid crystal epoxy systems were also studied. Dr. Thomas joined Kimberly-Clark Corporation in 1995 where he is currently working as a Materials Scientist focusing on designing and developing value-added elastomers and materials for personal care products applications. He is using the fundamentals of materials science to establish process-structure-property relationships of elastomers. Oomman is a member of the American Physical Society and Society of Plastics Engineers.

☐ **Dr. Rajen Patel**

Rajen Patel obtained his B.S. in Chemical Engineering from the University of Bombay in 1984. He joined the University of Tennessee, Knoxville, U.S.A. in September 1985, obtained a M.S. in December 1987 and Ph.D. in May 1991, both in Polymer Science & Engineering. (*Continued on page 3*)

Engineering Properties and Structure Division

BALLOT (Cont.)

Dr. Patel joined Polyolefins Research of the Dow Chemical Company in the material science group June of 1991. He has worked on various projects involving polyolefins characterization (thermal & rheological), material science and product development, including oriented shrink films, sealants, cast stretch films, blown films, elastic films and fibers. He has completed extensive research on materials science and applications development of single-site catalyzed Polyolefins and has written a chapter on structure-properties and applications of polyolefins produced by single-site catalyst technology in the Encyclopedia of Chemical Processing and Design. Rajen has also co-authored 21 technical peer reviewed journal publications and four book chapters. Additionally, he is a co-inventor of 41 granted US patents. In 2009, Dr. Patel was elected as a Fellow of Society of Plastics Engineers (SPE) and he is currently a Fellow in the Performance Packaging Technical Service and Development Group of the Dow Chemical Company.

□ Dr. Murali Rajagopalan

Dr. Murali Rajagopalan is a recipient of SPE's Society's 2010 Research and Engineering Technology Award. He was elected a Fellow of the Society of Plastics Engineers in 2006 and has been with the EPSDIV Board since 1995 in numerous leadership capacities as past Board Chair, Co-TCP chair, Treasurer, newsletter committee and current Society Award Committee Chair, just to name a few. Murali's role as Society Award Committee Chair has been instrumental in the society's recognition of at least fourteen Fellows and four (HSM's) Honor Society Member's. He was the Director of Materials Research and is currently the Director of Quality Assurance for Raw Materials at Acushnet – Titleist's Golf Ball Research and Development. Additionally, he is an Adjunct Professor in the University of Massachusetts – Dartmouth's BioEngineering Department. Murali is either a solo or co-inventor of over 245 U.S. Patents in the area of golf ball materials processing and the use of vinyl alloys in HVAC, computer housing and medical devices. He is an active board member of National Textile Committee and was a past Chair for ACS's New England Rubber & Plastics Group.

□ Dr. Paul Rothweiler

Dr. Paul Rothweiler is a current board member of EPSDiv seeking re-election. In Paul's first term he volunteered to lead a task force to identify ways to connect members to EPSDiv. The task force recommended the creation of (EPSDiv) LinkedIn, Twitter and Facebook sites. A charter to enhance communication with the Plastic's community, in particular students pursuing careers in plastics was initiated. Paul currently leads the committee responsible for developing, posting content and communicating the progress to the Board.

He is a Chemist with over thirteen years at Aspen Research Corporation and has twenty seven years of industrial experience. Dr. Rothweiler is responsible for establishing Aspen's technology development strategies, translating them into 'roadmaps of action' and supporting all aspects of the company's technology development.

□ Dr. Sharon Wu

Dr. Xiaosong (Sharon) Wu is currently an associate scientist of Dow Elastomers Product Research Group, at The Dow Chemical Company.

She received her B.E. in Polymer Materials and Engineering from Beijing Institute of Petrochemical Technology and her Ph.D. also in Polymer Materials and Engineering from Georgia Institute of Technology in 2008.

Dr. Wu has developed an expertise in her academic and industrial career in polymer structure properties, polymer blends and composite, polymer reactive extrusion and polymer MEMS multidisciplinary research.

Her current research interests are focused on:

- Structure-property relationships of polyolefin elastomer products
- New processes and methods to produce unique elastomer products with differentiated properties
- Polyolefin elastomer based formulated compound solutions for infrastructure and automotive applications
- Fundamental understanding of polymer blend morphology development and other physical-chemical phenomena along the extruder

Dr. Wu is a member of the Society of Plastics Engineers and American Chemical Society. She is author and co-author of 12 refereed journal publications, 11 patent applications, and 16 conference proceedings. 3



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

The ANTEC 2014 conference is scheduled to take place in Las Vegas April 28th - April 30th. The technical submission deadline was extended from Oct 25th to Nov 8th.

Thirty-six technical submissions were made to the EPSDIV for ANTEC 2014. Of these, thirty are technical papers, one duplicate paper, and five posters. A total of twelve EPSDIV members volunteered to review the technical papers. An effort was made to assign papers to reviewers in alignment with their areas of expertise. The review was carried out in record time, despite the extended paper submission timeline. The recommendation of the review panel was to accept twenty eight of the submitted papers, reject one, and combine two into a single paper due to largely overlapping content. The authors were individually informed, by e-mail, of the paper review panel's decision.

Based on the submitted papers, six EPSDIV technical sessions are scheduled for ANTEC 2014. The technical session topics covering the EPSDIV core areas of focus are:

- Polymer Morphology Characterization & Testing (1 keynote + 4 papers)
- Structure-Property Relationship (5 papers)
- Nanostructures, Properties, and Applications (1 keynote + 5 papers)
- Polymer Modeling (1 keynote + 5 papers)
- Materials Processing, Fabrication and Properties (1 keynote + 5 papers)
- Polymer Stability and Failure Analysis (1 keynote + 5 papers)

The following speakers have confirmed availability to deliver keynote addresses at the technical sessions

- Arthur Bobovitch, VP R&D & Quality, Syfan Saad Company
- Hari Reddy, VP R&D, Bemis

- Hsinjin (Edwin) Yang Honorary Fellow, Dept. of Mechanical Engineering, Univ. of Wisconsin – Madison and President, Pioneer Scientific Solutions
- Lora Liang, Kraft Foods
- Chris Li, Drexel
- Jeff Wooster, Global Sustainability Manager, The Dow Chemical Company

Professor Stephen McCarthy from the U of Mass, Lowell, winner of the 2014 SPE Education Award, is also invited to give a keynote address at one of the core technical sessions.

In addition to the core technical sessions, three special sessions are being organized in collaboration with other divisions.

- **EPSDIV-Pipes and Fittings SIG Collaborative Session in honor of Prof. Alexander Chudnovsky, UIC Distinguished Professor Emeritus, Monday, April 28th P.M.**

Alexander Chudnovsky is an UIC Distinguished Professor Emeritus and Director of the Fracture Mechanics & Materials Durability Laboratory at Civil and Materials Engineering Department of The University of Illinois at Chicago. He has worked at UIC since 1987. Professor Chudnovsky received his education in the former Soviet Union, a M.S. degree in Civil Engineering in 1962 and his Ph.D. in Technical Sciences (Applied Mathematics) in 1966. From 1980 until 1987 he was Professor of Civil Engineering and Macromolecular Science Departments at Case Western Reserve University, Cleveland, OH. Professor Chudnovsky is widely recognized for his novel contributions to experimental and theoretical developments of Fracture Mechanics, Materials Durability and accelerated testing for the lifetime of engineering structures.

Session Presenters

- Kalyan Sehanobish, Senior Fellow, The Dow Chemical Company
- Reinhold Lang, Head, Institute of Polymeric Materials and Testing, JKU Linz, Austria
- Arnold Lustiger, ExxonMobil Research & Engineering
- Alan Lesser, Editor-in-chief, Polymer Composites Journal; Polymer Science and Engineering Department, University of Massachusetts, Amherst
- Ebrahim Suhir, Professor, Electrical Engineering Dept., University of California
- Alexander Chudnovsky, UIC Distinguished Professor Emeritus

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!



Check it out online >

www.antic.ws

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Financial Report from July 1, 2013 to January 17, 2014



FINANCIAL REPORT FROM JULY 1, 2013 TO JANUARY 17, 2014

BALANCE as of July 1, 2013 (cash, checking, savings, investments)	\$ 30659.24
INCOME	ACTUAL
SPE Rebate	5450.00
ANTEC Sponsorships	2883.70
TOTAL INCOME	\$ 8333.70
EXPENSES	
Newsletter Production	528.00
Councilor Travel	816.92
ANTEC	119.10
TOTAL EXPENSES	\$ 1464.02
CASH FLOW	\$ 6869.68
ENDING BALANCE as of January 17, 2014	\$ 37528.92

Submitted by Emmett Crawford, EPSDIV Treasurer 2013-2014

ANTEC 2014 Proposed EPSDIV Session Schedule

- Session 1:** Polymer Morphology Characterization & Testing, Monday, April 28th, 8:30-11:00 AM
- Session 2:** Structure-Property Relationship, Monday, April 28th, 8:30-11:00 AM
- Session 3:** EPSDIV & Pipes & Fittings SIG joint session - Symposium to Honor Prof. Alexander Chudnovsky, Monday, April 28th, 1:30-5:00 PM
- Session 4:** Nanostructures, Properties, and Applications, Monday, April 28th, 1:30-5:00 PM
- Session 5:** Polymer Modeling, Tuesday, April 29th, 8:00-11:00 AM
- Session 6:** EPSDIV & E&E SIG joint new technology session - "Polymers in Microelectronics and MEMS", Tuesday, April 29th, 8:00-11:00 AM
- Session 7:** EPSDIV & Vinyl Division joint session - Don Witenhafer Memorial Symposium, Tuesday, April 29th, 1:30-5:00 PM
- Session 8:** Materials Processing, Fabrication and Properties, Wednesday, April 30th, 8:00-11:00 AM
- Session 9:** Polymer Stability and Failure Analysis, Wednesday, April 30th, 8:00-11:00 AM

- **EPSDIV- E&E SIG Collaborative session on “Polymers in Microelectronics and MEMS”, Tues, April 29th AM**

The fast, continuous advancement in microelectronics has impacted almost every aspect of our lives. This dynamic industry is propelled by constant technological evolutions, in which polymers have played a critical role. They serve as photoresists in microlithography, as insulating dielectric materials in interconnects, as conductive materials in flexible electronics, and as packaging materials for chips and so on. The advantages that apply to microelectronics, apply similarly to MEMS. Especially the unique aspects of plastic material properties, such as a wide variety of material characteristics, lower cost, mature processing technology, and material safety. The rapid downsizing of microelectronics as well as the emerging of MEMS devices and flexible organic electronics continues to pose more and more challenges for polymer material science.

Session Presenters

- Mark G. Allen, Univ. of Pennsylvania
- Yong-Kyu Yoon, Univ. of Florida
- Donggang Yao, Georgia Institute of Technology
- Paul Yung, Celanese US
- Prof. Richard Gregory, ODU
- Weijun Zhou, The Dow Chemical Company

- **EPSDIV-Vinyl Division Collaborative Memorial Session for Don Witenhafer, Tues, April 29th PM**

Donald Edward Witenhafer passed away Friday, September 20, 2013. He is greatly missed! Don earned his Ph.D in Polymer Science from Case Western Reserve University in 1968 and joined B.F. Goodrich where he worked in PVC for over twenty years. After spending five years with SC Johnson Wax as manager of polymer research, he went into consulting mostly in PVC and had been doing so for over fifteen years. Dr. Donald E. Witenhafer, most recently a member of SPE-South Texas Section and a long standing member of SPE-EPSDIV, was elected to the Plastics Hall Of Fame in recognition of his pioneering technical achievements that saved the polyvinyl chloride (PVC) industry.

Session Presenters :

- Josh Wong, Professor, Dept. of Mech. Engineering, Univ. of Akron
- Jason Lyons, Manager Polymer Additives R&D, Arkema Inc.

- Sadhan Jana, Professor, Dept. of Polymer Engineering, Univ. of Akron
- Sylvia Moore, Shin-Tech
- Robert Paradis, Formosa Plastics
- William D. Arendt, Research Fellow, Emerald Kalama Chemical, LLC

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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