

APPLIED RHEOLOGY ~~SPECIAL INTEREST GROUP~~ **DIVISION**

Summer 2015 Newsletter

Welcome to Applied Rheology Division newsletter!

Over the last 6 months, the Applied Rheology SIG has become a Division of SPE! It is our pleasure to welcome you to the first newsletter for this year.

A Brief Summary of ANTEC 2015

The Applied Rheology Division received a total of 20 papers. They focused on the rheological characterization of polymer blends, polymer processing, long chain branching, composites, modeling and process simulation. **TA Instruments** (World Leader in Rheology, and Thermal equipment manufacturer) generously sponsored the best paper award for the invited speakers. Thanks to Dr. Manojkumar Chellamuthu and Dr. Tieqi Li for their fruitful efforts in selecting the best paper. The best paper was awarded to Mr. Seigo Kotera and Dr. Masayuki Yamaguchi for their work on *"Rheological Characterization on Thermal Stability and Flow Instability of Ethylene Tetrafluoroethylene Copolymer"*. There were invited talks from Prof. Chris Macosko (Bingham Medalist, IPRIME director) of University of Minnesota and Prof. Donggang Yao of Georgia tech. All the talks were well attended and there was very positive response from the audience. Thanks to Tieqi Li our Technical program chair (TPC), for coordinating the sessions and thanks to everyone for helping him making it a success.



Prof. Macosko (5th from left) with board members and other attendees.



Best paper award being given to Mr. Seigo Kotera by Dr. Greg Kamykowski (on right) of TA Instruments

Lastly, there was a board meeting where current board members met and exchanged ideas (more details in next newsletter). Also, at this board meeting, SPE members interested in joining the board came and introduced themselves.

APPLIED RHEOLOGY SPECIAL INTEREST GROUP **DIVISION**

Summer 2015 Newsletter



Past and present board members with those interested in becoming board members and Kathy Schacht from SPE (4th from left)

Meet your Board Members

Himanshu Asthana – Membership Chair



Daphne Benderly



Dr. Benderly is a Senior Applications Scientist at Presperse. She has over 20 years of experience in industrial R&D, among others in the personal care, polymers and specialty chemicals industries. She received

her doctorate in Materials Engineering from the Technion - Israel Institute of Technology; MS in Macromolecular Sciences from Case Western Reserve University and BS in Mechanical Engineering from Massachusetts Institute of Technology.

Daphne has authored scientific journal publications, book chapters, and patent applications. She is a member of SPE and SCC (Society of Cosmetic Chemists). She is on the Board of Directors for the SPE Applied Rheology Division, and has been involved in the organizing committee of several SCC technical symposia.

Manojkumar Chellamuthu – Sponsorship Chair



Manojkumar Chellamuthu is currently a Senior Scientist at SABIC where he is a research specialist in the area of rheology and polymer physics. Manojkumar holds a Ph.D. from University of Massachusetts, Amherst in mechanical engineering. His thesis was in the area of extensional rheology of complex fluids. He then was a post-doctoral scientist at NIST's polymer division where he studied rheology of shear thickening fluids and their impact in softbody armor applications.

He has been a SIG's board member since 2014. He is also a member of the Society of Rheology. He has reviewed papers for *Journal of Rheology* and *Journal of Applied Polymer Science*.

APPLIED RHEOLOGY ~~SPECIAL INTEREST GROUP~~ DIVISION

Summer 2015 Newsletter

Narasimharao Dontula – Newsletter Editor/Communications Chair



Narasimharao (Rao) has been a board member for the past 2 years. He currently carries out research and development at Multisorb Technologies in the area of active packaging for food and pharmaceuticals. During the course of his industrial experience, he has had roles ranging from individual contributor to program leader and Technical Champion in the field of foams, thin films, nanocomposites and membranes; where he has used rheology to design products. He has worked at Pactiv Corporation, Eastman Kodak, Pall Corporation and W.L. Gore and associates. He has 48 issued US patents and has authored papers in journals and SPE ANTEC and PPS conferences. He has co-authored a book chapter on applications of nanocomposites in imaging and display media. He has served as a Technical program chair for thermal printing at the Non-Impact Printing Conference.

William Karszes



Myung-Ho Kim



Dr. Kim has a Ph.D. in Polymer Engineering from the Stevens Institute of Technology. He has a B.S. and M.S. degrees in Chemical engineering from Seoul National University. Since 2008, he has been at Department of Polymer Science & engineering and is currently an associate professor. Since 2010, he has been running his own company MKE in Korea that manufactures screw rheometers. He has over 15 years of work experience at LG chemical in Korea and led their polymer processing technology team and the team that commercialized *Hyperier*[®] a MMT based nanocomposite. He is an author of journal articles, 3 book chapters and has number of US patents in the area of nanocomposites. He is part of the organizing team for 31st PPS meeting in Korea (2015); member of ASTM and has been a consultant for Polymer Processing Institute.

Mary Krenceski



APPLIED RHEOLOGY ~~SPECIAL INTEREST GROUP~~ DIVISION

Summer 2015 Newsletter

Mary A. Krenceski holds a Ph.D. from the Institute of Materials Science at the University of Connecticut in Storrs, CT. Her 31 years of experience include industrial positions focusing on polymer/material science and characterization at Eastman Kodak Company and General Electric Company. She has also worked for the specialty molding company Extreme Molding, Watervliet, NY on applications with silicone liquid injection molding, thermoplastic over molding and adhesion. She is currently in the Process Technology group at Momentive Performance Materials (formerly GE Silicones), Waterford, NY, working on new silicone-based molding products and rheology test method utilization.

Tieqi Li – 2015 TPC Chair for Applied Rheology



Since 2008, Dr. Tieqi Li has been an extrusion scientist at NOVA Chemicals. He studies rheology of polyethylene and applies it in extrusion simulations and resin design. At NOVA Chemicals, he also serves in the role of a product development scientist for various applications. Before joining NOVA Chemicals, he was a special project leader at JANA laboratories in the area of plastics pipe and fitting testing and failure analysis. Tieqi earned his Ph.D in Zhongshan University in China in 1997 and has published more than 20 papers in peer-reviewed journals. He also has published a book chapter on rheology of wood plastics and a few conference papers.

Qian Qin



Dr. Qian Qin is currently working for GAF Materials as a research scientist. Before she joins GAF, she was a lead scientist at Western Research Institute after finishing her postdoc at University of Southern Mississippi. She holds a Ph.D. of Chemical Engineering from Texas Tech University. At her early career, she has worked for Sinopec (China Petrochemical Corp.) for three years. Her past work experience focused on the rheology of polymers and complex fluids, structure-property relationships of polymers, elastomers and polymer composites. Her current work at building materials company involves polymer applications in asphalt roofing products and pavements as well as the viscoelasticity investigations of asphalts and polymer modified asphalts.

Gustaaf Schoukens



Summer 2015 Newsletter

Prof.dr.ir. Gustaaf Schoukens recently retired (Oct'2014) as a professor of polymer technology at the Ghent University (Belgium), faculty of Engineering. He received his degree in Chemical Engineering from the K.U. Leuven (Belgium) in 1971, from where he also obtained his Ph.D. in 1978. The subject of his Ph.D. research was "Non-linear viscoelastic behavior of dispersions".

He worked as a senior researcher at Solvay from 1978 till 2004 in the field of polymerization and polymer processing. In 2004, he became a fulltime professor at the Ghent University where he taught courses concerning polymer technology, including processing and polymerization processes. He was also involved in the courses concerning "environment and sustainable development" in general and teaching the course of "rational use of materials" in particular.

He has researched in the area of polymer technology and polymer processing, including synthetic and biopolymers. Currently, he has been working in the area of development of artificial turf for sport applications and the development of biopolymers based on chitin or chitosan with biomedical properties. He has also been researching in the area of nanostructures, especially nanoparticles obtained by reaction engineering. These nanoparticles are being used in large quantities for the coating of paper and paperboards. He is an expert in the production of monofilaments for artificial sport applications and founded ERCAT (European Research Centre for Artificial Turf).

Donggang Yao



Donggang Yao is a Professor in the School of Materials Sci. & Eng. at Georgia Tech. He received a BS degree in Precision Instruments from Shanghai Jiao Tong University in 1991; and MS and Ph.D. degrees in Mechanical Engineering from University of Massachusetts Amherst in 1998 and 2001. He teaches and directs research in the broad area of polymer engineering. His ongoing research is in the area of polymer precision molding, fiber spinning, composites processing, constitutive modeling and process modeling. His work has resulted in ~80 journal publications and ~100 conference papers. He was a recipient of the NSF Career Award in 2003. He has served as the Chair for the ASME Textile & Composites Technical Committee from 2009 to 2011. He is currently an associate editor for *ASME Journal of Manufacturing Science & Engineering* and serves in the advisory board for *Polymer Engineering & Science*.

APPLIED RHEOLOGY ~~SPECIAL INTEREST GROUP~~ DIVISION

Summer 2015 Newsletter

Martin Zatloukal



Martin Zatloukal received his Master and Ph.D. degrees from Brno University of Technology in Rubber and Plastics Technology and Technology of Macromolecular Substances, respectively. In 1998-1999, he joined the Department of Chemical Engineering at the University of Waterloo for a research fellowship. Then he joined the Polymer Centre at Faculty of Technology, Tomas Bata University in Zlin as the research assistant. In 2007, he became a Professor of Technology of Macromolecular Substances. Martin received the ExxonMobil Chemical European Science & Engineering Award 2007 for the work "Understanding Free Surface Flow Instabilities during Polymer Processing", and Best paper Award at ANTEC 2010 on "Die Drool Phenomenon During Polypropylene Extrusion". In 2013, he was elected a Fellow of the Society of Plastics Engineers. His research interests include applied rheology, flow instabilities, extrusion and modeling of polymer processing.

Wei Zheng - Chair & Councilor



Dr. Zheng is currently an Assistant Professor of Plastics Engineering Program at University of Wisconsin-Stout. Prior to joining UW-Stout in 2012, she was a Postdoctoral Researcher in the Polymer Science and Engineering Department at University of Massachusetts-Amherst. She received her Ph.D. in Chemical Engineering at Texas Tech University in 2008. Her research is primarily in the areas of polymer physics, mechanics, and processing including the development of biobased nanocomposites, curing kinetics of thermosetting resin, rheology of complex fluids, and structure-property-processing relationship. She has authored 29 refereed articles, currently has over 440 citations, and made more than 30 conference presentations. She has served the Society of Plastics Engineers in various positions: President of Outstanding SPE Student Chapter at Texas Tech (2006 - 2007), Reviewer for Applied Rheology SIG (2009 - 2012), and Technical Program Chair of the SIG (2012 - 2014), and now is the Chair and Councilor of the Applied Rheology Division.

*Have a great summer!
Best Regards,
Narasimharao (Rao) Dontula
Communication Chair
Applied Rheology Division*