DIVISION OF POLYMERIC MATERIALS: SCIENCE & ENGINEERING

2011 PMSE Fellow Ceremony

The American Chemical Society Division of Polymeric Materials: Science and Engineering (PMSE) has just completed its process to select a new class of PMSE Fellows for 2011 and the following distinguished PMSE members have been chosen:

- Rigoberto Advincula
- Zhenan Bao
- Patrick E. Cassidy
- Joseph M. DeSimone
- Douglas L. Gin
- Charles C. Han
- Thomas P. Russell
- Richard A. Vaia

They will be inducted as the eleventh class of PMSE Fellows at the Anaheim ACS Meeting during the joint PMSE/POLY Awards Reception on Wednesday evening, March 30, 2011. PMSE is pleased to welcome this distinguished group of polymer scientists and engineers to the ranks of fellows.

A short description of their work up to the point of the induction as a PMSE Fellow is on the following pages.

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2011 PMSE Fellow Induction Biographies

2011 PMSE Fellow

Rigoberto Advincula
University of Houston

"For seminal contributions to the field of nanostructured thin film materials utilizing novel synthetic and analytical methods"

Professor Rigoberto Advincula or “Gobet” has recently been elected as PMSE Fellow 2011 and Polymer Fellow 2011 of the American Chemical Society (ACS). He was inducted last year as ACS Fellow 2010. At 43, he is one of the youngest. He has been invited twice by the National Academies of Science and Engineering and Institute of Medicine to participate in “think tank” conferences. He was past recipient of the Arthur Doolittle Award (PMSE), NSF CAREER Award, Alexander von Humboldt Fellow, FSCT (ACS) Technical Speaker Award, Koh Science Award (PAASE), PDF-USA Excellence in Science and Technology Award, and the University of Houston’s Research Excellence and Undergraduate Mentoring Awards. His research is mainly in the area of polymer and nanomaterials with both fundamental and applied focus. He has published over 360 papers and has given more than 495 presentations in international conferences and centers of excellence in the US and abroad. He has mentored 24 Ph.D. and 54 undergraduate students in a discovery-driven research environment. He serves on the Editorial and Editorial Advisory Board of *Macromolecules* (2006-2009), *Chemistry of Materials*, *Macromolecular Rapid Communications*, *Macromolecular Physics and Chemistry*, *Polymers for Advanced Technologies* (PAT), *Journal of Bioactive and Compatible Polymers*, *Macromolecular Research*, and *ACS-Applied Materials and Interfaces*. He currently serves as Editor of *Reactive and Functional Polymers*. He has also held Visiting Professorships at the Max Planck Institute for Polymer Research, McGill University, University of Montreal, University of Paris, Waseda University, Austrian Institute of Technology, and Tokyo University (TUAT). He obtained his Ph.D. in Chemistry at the University of Florida and did post-doctoral work at the Max Planck Institute for Polymer Research and Stanford University. Currently he is Professor of Chemistry and Chemical Engineering at the University of Houston and does a number of consulting in industry as well as tutorial workshops in the areas of nanostructured materials, smart coatings, polymer brushes, materials for organic semiconductor devices, biosensors, and bioactive materials.

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2011 PMSE Fellow

Zhenan Bao

Stanford University

"For original contributions to the understanding of designing and processing of polymers for flexible electronics."

Professor Zhenan Bao received her Ph.D degree from the University of Chicago in 1995. She subsequently joined Bell Labs, Lucent Technologies, and became a Distinguished Member of Technical Staff in 2001. She joined the faculty of the Stanford Chemical Engineering Department in March of 2004.

Professor Bao has more than 200 refereed publications and 35 US patents. She currently serves as a Board Member for the National Academy Board on Chemical Sciences and Technology. She served as a member of Executive Board of Directors for the Materials Research Society and Executive Committee Member for the Polymer Materials Science and Engineering division of the American Chemical Society. She is an Associate Editor of Synthetic Metals. She was an Editor for Polymer Reviews and she serves on the international advisory board for Advanced Functional Materials, Chemistry of Materials, ACS Nano and Materials Today. She was elected a SPIE Fellow in 2008. She is a recipient of the ACS Author Cope Scholar Award for 2011, the Royal Society of Chemistry Beilby Medal and Prize in 2009, IUPAC Creativity in Applied Polymer Science Prize in 2008, American Chemical Society Team Innovation Award 2001, R&D 100 Award, and R&D Magazine's Editors Choice of the "Best of the Best" new technology for 2001. She has been selected in 2002 by the American Chemical Society Women Chemists Committee as one of the twelve "Outstanding Young Woman Scientist who is expected to make a substantial impact in chemistry during this century". She is also selected by MIT Technology Review magazine in 2003 as one of the top 100 young innovators for this century. She has been selected as one of the recipients of Stanford Terman Fellow and has been appointed as the Robert Noyce Faculty Scholar, Finmeccanica Faculty Scholar and David Filo and Jerry Yang Faculty Scholar.

Personal homepage: http://cheme.stanford.edu/faculty/zbao.html

DIVISION OF POLYMERIC MATERIALS: SCIENCE & ENGINEERING

2011 PMSE Fellow

Patrick Cassidy

Texas State University

"For important contributions to polymer science, technology and education."

Dr. Patrick Cassidy was educated at the University of Illinois (B.S. in Chemistry with Honors), the University of Iowa (M.S. and Ph.D. in Chemistry) and the University of Arizona (Post-doctoral Fellow with C. S. Marvel). Following seven years as an industrial chemist and cofounding of Texas Research Institute, a private contract R&D company, he came to Texas State University as a faculty member and subsequently served for 15 years as Associate Vice President of Academic Affairs and is now an Emeritus Professor in the Chemistry Department.

During his tenure at Texas State, he initiated the polymer science program, which has grown to a major initiative in the department, and created and directed four centers and institutes, including the Polymer Science Center and the Institute for Environmental and Industrial Science. Dr. Cassidy visited and established cooperative agreements with several US and foreign companies and universities. Several graduate students and international exchange researchers have spent many years in his research laboratories at Texas State resulting in numerous patents and publications. As a member of the American Chemical Society for over 50 years, he has served in local and national offices and Divisions.

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2011 PMSE Fellow

Joseph DeSimone
North Carolina State University

"For pioneering concepts in polymeric materials for diverse technologies including bioabsorbable stents and green manufacturing of Teflon, and for adapting computer industry manufacturing technologies to create new vaccines and nano-medicines."

Dr. Joseph DeSimone is the Chancellor's Eminent Professor of Chemistry at the University of North Carolina at Chapel Hill and William R. Kenan Jr. Professor of Chemical Engineering at North Carolina State University. DeSimone is also an Adjunct Member at Memorial Sloan-Kettering Cancer Center in New York. DeSimone has published over 270 scientific articles and has over 115 issued patents in his name with over 120 patents pending. In 2005 DeSimone was elected into the National Academy of Engineering and the American Academy of Arts and Sciences.

DeSimone has received 40 major awards and recognitions including the 2010 AAAS Mentor Award, the 2009 NIH Director's Pioneer Award; the 2009 North Carolina Award; and the $500,000 Lemelson-MIT Prize for Invention and Innovation. In 2002, DeSimone, along with Dr. Richard Stack a cardiologist at Duke and Robert Langer from MIT, co-founded Bioabsorbable Vascular Solutions (BVS) to commercialize a fully bioabsorbable, drug-eluting stent. These stents are now being evaluated in a series of international clinical trials led by Abbott, enrolling over 1000 patients, for the treatment of coronary artery disease. DeSimone's group is now heavily focused on the development of a roll-to-roll particle fabrication technology known as PRINT (Particle Replication in Non-wetting Templates). DeSimone is exploiting the advantages of PRINT to generate "calibration quality" nano-tools to define the geometric (size, shape), surface (zeta potential, stealthing ligands) and deformability limitations associated with the delivery of drugs and vaccines using different dosage forms. DeSimone recently launched Liquidia Technologies (www.liquidia.com) which now employs almost 50 people in RTP and has raised over $50 million in venture financing. Liquidia has converted PRINT into a GMP compliant process and has recently brought its first product, a seasonal influenza vaccine based on PRINT particles, into its first clinical trial. DeSimone received his BS in Chemistry in 1986 from Ursinus College in Collegeville, PA and his Ph.D. in Chemistry in 1990 from Virginia Tech.

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2011 PMSE Fellow

Douglas L. Gin
University of Colorado at Boulder

"For contributions to the development of a new class of functional, nanoporous polymer materials based on lyotropic liquid crystals."

Professor Douglas L. Gin was born in 1966 in Ashcroft, BC, Canada. He received his B.Sc. in Chemistry from the University of British Columbia in 1988 and his Ph.D. in Chemistry from Caltech with Bob Grubbs in 1993. After postdoctoral work with Alan MacDiarmid at the University of Pennsylvania, he began his independent research career in the Dept. of Chemistry at the University of California at Berkeley in 1994. In 2001, he moved to the University of Colorado at Boulder, where he is currently a joint Professor in the Dept. of Chemistry & Biochemistry and in the Dept. of Chemical & Biological Engineering. Doug's research interests include the design, synthesis, and applications development of nanoporous polymers based on lyotropic liquid crystals, and new polymers and composites based on room-temperature ionic liquids.

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2011 PMSE Fellow

Charles C. Han

Chinese Academy of Sciences

"For excellent contributions in the application of phase separation kinetics for the structure and property control of polymer blends."

Professor Charles C. Han is Director and Chief Scientist of the Joint Lab of Polymer Science and Materials, Institute of Chemistry, the Chinese Academy of Sciences, China. He received his Ph.D. degree in Physical Chemistry from the University of Wisconsin, Madison in 1973 and his M.S. degree in Physical Chemistry from the University of Houston in 1969 and his B.S. degree in Chemical Engineering from National Taiwan University in 1966. He was a Group Leader at the National Institute of Standards & Technology in the United States (1985 -2002). Professor Han has authored and co-authored more than 400 scientific papers in archived journals and books with an H-index of 45. He has more than 20 US and Chinese patents.

Dr. Han is an Editor of the journal of Polymer and serves on the Editorial Boards of *Journal of Polymer Science, Polymer Physics* (1993-2010), *Journal of Chemical Physics* (1996-1998), *Macromolecular Research* (2005-Present), *Macromolecules* (2006-2009), *Progress in Polymer Science* (2006-present). He is also a member of the Board of Directors, Materials Research Society (2008-Present). Dr. Han is the recipient of several awards, including Bronze Medal of U.S. Department of Commerce (1980), Silver Medal of U.S. Department of Commerce (1982), Dillon Medal of American Physical Society (1984), Gold Medal of U.S. Department of Commerce (1986), Samuel Wesley Stratton Award for Best Research, National Institute of Standards & Technology (1990), Humboldt Senior Research Award from Alexander von Humboldt Foundation, Germany (1995), and the High Polymer Physics Prize, American Physical Society, Division of High Polymer Physics (1999).

DIVISION OF POLYMERIC MATERIALS: SCIENCE & ENGINEERING

2011 PMSE Fellow

Thomas P. Russell

University of Massachusetts, Amherst

"For pioneering research and fundamental elucidation of the surfaces and interfacial behavior of polymers."

Dr. Thomas P. Russell, the Silvio O. Conte Distinguished Professor of Polymer Science and Engineering, received his PhD in 1979 in Polymer Science and Engineering from the University of Massachusetts Amherst. He was a Research Staff Member at the IBM Almaden Research Center in San Jose, CA (1981-96) and became a Professor of Polymer Science and Engineering at the University of Massachusetts Amherst (1997). His research interests include the surface and interfacial properties of polymers, phase transitions in polymers, directed self-assembly processes, the use of polymers as scaffolds and templates for the generation of nanoscopic structures, the interfacial assembly of nanoparticles, dynamics in polymer thin films, and wrinkling and crumpling behavior of thin polymer films. He is the Director of the Energy Frontier Research Center on Polymer-Based Materials for Harvesting Solar Energy, and an Associate Editor of Macromolecules. He is a fellow of the American Physical Society, the American Association for the Advancement of Science, the Materials Research Society and the Neutron Scattering Society of America, and a member of the National Academy of Engineering.

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2011 PMSE Fellow

Richard A. Vaia
Air Force Research Laboratory (AFRL)

"For seminal contributions to the fabrication of polymer nanocomposites, and the understanding of fundamental structure-property relationships."

Dr. Richard A. Vaia is the Branch Chief of the Nanostructured and Biological Materials Branch at the U.S. Air Force Research Laboratory (AFRL). The 70 person government and contractor team focuses on accelerating the maturation of high-risk material-based solutions for Air Force unique energy and sensor requirements. His research group focuses on polymer nanocomposites, complex nanoparticle architectures and their impact on developing adaptive soft matter. He received his BS, MS, and PhD degree in Materials Science and Engineering at Cornell University (1991, 1993, 1995) and was a distinguished graduate from Cornell's AFROTC. His honors and awards include Fellow of the Air Force Research Laboratory (2010), Fellow of the American Physical Society (2010), Doolittle Award (American Chemical Society PMSE, 2009), MRL Visiting Professor at University of California Santa Barbara (2006), Air Force Outstanding Scientist (2002), and Air Force Office of Scientific Research Star Team (2001-2013). Rich has served on numerous editorial boards, Board of Directors and external review panels. He has authored over 160 peer-reviewed papers and patents.