



DIVISION OF POLYMERIC MATERIALS: SCIENCE & ENGINEERING

2013 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 2013 and the following distinguished PMSE members have been chosen:

- Timothy J. Bunning
- Todd Emrick
- Andy Lovinger
- Darrin Pochan
- John Reynolds
- Michael Rubner
- Kenneth J. Shea
- James Wang

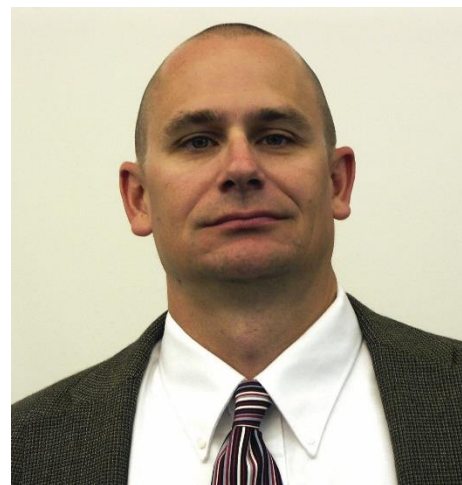
They will be inducted as the Thirteenth Class of PMSE Fellows at the New Orleans ACS Meeting during the joint PMSE/POLY Awards Reception on Wednesday evening April 10, 2013. PMSE is pleased to welcome this distinguished group of polymer scientists and engineers to the ranks of fellows.

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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2013 PMSE Fellow Induction Biographies



2013 PMSE Fellow

Timothy J. Bunning

Air Force Research Laboratory

“For creative development of responsive-based polymer-based material systems for dynamic photonic, mechanical, and sensing applications”

Dr. Timothy J. Bunning is currently Chief of the Functional Materials Division of the Materials and Manufacturing Directorate, Air Force Research Laboratory, Wright-Patterson Air Force Base. He is active in a diverse internal and external R&D effort that is developing new soft matter-based responsive materials and approaches for integration in a variety of applications. His current research interests center on developing novel mixtures of polymer and liquid crystal materials for use in a variety of dynamic photonic architectures. He is the author or co-author of ~200 peer-reviewed publications, 90+ proceeding papers, several book chapters, and 16 patents. He has served the PMSE Division of ACS as a member of the Technical Program Committee (2002-2005), as a many year Member-at-Large (currently), and as a multiple ACS symposium organizer. He is the recipient of the 2002 John H. Dillon Medal from the Division of Polymer Physics, American Physical Society, and is currently a Fellow of APS, SPIE, and the Air Force Research Laboratory.



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2013 PMSE Fellow

Todd Emrick

University of Massachusetts Amherst



“For innovative contributions to polymer synthesis and nanocomposite assembly”

Prof. Todd Emrick is a Professor of Polymer Science and Engineering at the University of Massachusetts Amherst, and Director of the National Science Foundation supported Materials Research Science and Engineering Center (MRSEC) on Polymers at UMass. He is an organic/polymer chemist, with specific interests in synthesis of new monomers and polymers, functional nanoparticles for directed assembly and responsive systems, and hydrophilic polymers that are tailored for aqueous assembly and therapeutic action. Emrick has a Bachelor's degree in Chemistry from Juniata College in Pennsylvania, and completed his Ph.D. at the University of Chicago where he studied the chemistry of caged hydrocarbons and strained organic molecules with Professor Philip Eaton. Emrick then performed postdoctoral research with Professor Jean Fréchet at the University of California Berkeley, where he focused on hyperbranched synthetic polymers and their applications as functional adhesives. He started his independent career at UMass Amherst in 2001, and is now a Full Professor at UMass. In addition to his role as MRSEC Director, Emrick co-organizes polymer synthetic projects in the Energy Frontier Research Center (EFRC) on polymer solar cells at UMass, and leads a program focused on environmentally responsible plastics. He has published over 130 papers at UMass, and has 7 awarded patents.



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2013 PMSE Fellow

Andrew Lovinger

National Science Foundation



“For his contribution to fundamental understanding of structure, morphology and properties in technologically important polymers”

Dr. Andrew J. Lovinger is currently the Polymers Program Director in the Division of Materials Research of the National Science Foundation, where he has served since 1995. He spent most of his career (1977-1995) at Bell Laboratories, where he was Distinguished Member of Technical Staff and Head of the Polymer Chemistry Research Department (1985-1994). His education took place at Columbia University from which he received doctoral, MS, and BS degrees in chemical engineering and applied chemistry. Lovinger's research has been focused on discovering and controlling the structure, crystallization, morphology, phase transitions, and properties of technologically important polymeric materials. Many of these have been electroactive (semiconducting or ferroelectric). His research contributions have been recognized by a number of distinctions, including the Egleston Medal from Columbia University (2011), the ACS Award in Applied Polymer Science (2010), election to the National Academy of Engineering (2004), the APS Polymer Physics Prize (2003), Fellowship in the American Association for the Advancement of Science (1988), the APS Dillon Medal (1985), and APS Fellowship (1983). He is an Associate Editor of *Macromolecules* and has served on a number of editorial advisory boards.



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2013 PMSE Fellow

Darrin Pochan

University of Delaware



“For fundamental, collaborative work in the design of peptides and block copolymers for desired intermolecular assembly, control of their solution assembly, and characterization of final, unprecedented nanostructures and materials.”

Prof. Darrin Pochan is currently Professor in the Materials Science and Engineering Department as well as the Delaware Biotechnology Institute and Biomedical Engineering Program at the University of Delaware. Since joining the department in 1999 after a Ph.D. in Polymer Science and Engineering at the University of Massachusetts-Amherst and a National Research Council Post-doctoral fellowship at the National Institute of Standards and Technology in Gaithersburg, MD he has developed a research program around the construction of new materials and nanostructures via molecular solution assembly mechanisms. Areas of focus are biomaterials and materials for nanotechnology and energy applications through organic/inorganic hybrids. Recent honors for Darrin include an NSF Career Award, the DuPont Young Faculty Award, the Dillon medal from the American Physical Society and fellowship in the American Physical Society. Currently, Darrin also serves as Associate Editor for North America of *Soft Matter*, a new interdisciplinary journal from the Royal Society of Chemistry in the United Kingdom.



DIVISION OF POLYMERIC MATERIALS: SCIENCE & ENGINEERING



2006 PMSE Fellow

John Reynolds

Georgia Institute of Technology

“For his continuing and excellent contributions to Polymer Science and Engineering”

Dr. John R. Reynolds is a Professor of Chemistry and Biochemistry, and Materials Science and Engineering at the Georgia Institute of Technology with expertise in polymer chemistry and serves as a member of the Center for Organic Photonics and Electronics (COPE). His research interests have involved electrically conducting and electroactive conjugated polymers for over 30 years with work focused to the development of new polymers by manipulating their fundamental organic structure in order to control their optoelectronic and redox properties. His group has been heavily involved in developing new polyheterocycles, visible and infrared light electrochromism, along with light emission from polymer and composite LEDs (both visible and near-infrared) and light emitting electrochemical cells (LECs). Further work is directed to using organic polymers and oligomers in photovoltaic cells. Reynolds obtained his M.S. (1982) and Ph.D. (1984) degrees from the University of Massachusetts in Polymer Science and Engineering, he has published over 300 peer-reviewed scientific papers, has 15 patents issued and ~25 patents pending, and served as co-editor of the “Handbook of Conducting Polymers” which was published in 2007. He serves on the editorial board for the journals ACS Applied Materials and Interfaces, Macromolecular Rapid Communications, Polymers for Advanced Technologies, and the Journal of Macromolecular Science, Chemistry. John has been married to Dianne since October of 1986 and they have 3 children: Jackie, Bryan and Jason. He can be reached by e-mail at reynolds@chemistry.gatech.edu or see <http://ww2.chemistry.gatech.edu/reynolds/>.



DIVISION OF POLYMERIC MATERIALS: SCIENCE & ENGINEERING

2013 PMSE Fellow

Michael Rubner

Massachusetts Institute of Technology



“For his seminal contributions to science and engineering of polymeric materials made by the layer-by-layer assembled (LBL) films of polyelectrolytes.”

Prof. Michael F. Rubner is currently the TDK Professor of Polymer Materials Science and Engineering within the Department of Materials Science and Engineering at MIT. He has also been the Director of MIT's Center for Materials Science and Engineering, an NSF supported Materials Research Science and Engineering (MRSEC) program, for more than ten years. Rubner received his B.S. in Chemistry from the University of Lowell (summa cum laude, 1982) and his Ph.D. from the Department of Materials Science and Engineering at MIT (1986). While pursuing his undergraduate and graduate degrees, he worked as a full-time staff member in GTE Laboratories. Rubner has received all of the major teaching awards given at MIT and was named a MIT MacVicar Teaching Fellow in 1996. He has given more than 200 invited lectures including the Robert Maddin Lecture in Materials Science at the University of Pennsylvania (2010), the GE Distinguished Lecture at Rensselaer Polytechnic Institute (2009), the Bayer Distinguished Lecture at the University of Pittsburgh (2005), and the Dow Distinguished Lecture at Northwestern University (1995). He has published more than 200 technical papers, including five book chapters and is holder of numerous U.S. patents. He has served on the Board of Directors for the Materials Research Society, and currently is on the Advisory Boards of the Brookhaven National Lab and the ACS Chemistry of Materials Journal.

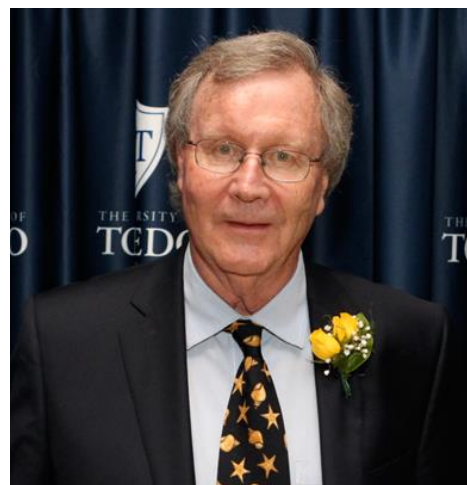


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2013 PMSE Fellow

Kenneth J. Shea

University of California, Irvine



“For his pioneering efforts in the fundamental understanding of molecular imprinting and bridged polysilsesquioxanes and his discovery of polyhomologation”

Prof. Kenneth J. Shea is a Professor of Chemistry and Chemical Engineering and Materials Science at the University of California, Irvine. He is a former Chair of the Chemistry Department. His current research interests are in abiotic polymer receptors for biomacromolecules; new C1 polymerization chemistry (polyhomologation) for hydrocarbon synthesis from non-petroleum feedstocks; functional hybrid organic-inorganic materials (bridged polysilsesquioxanes) and synthetic and mechanistic organic chemistry. He has mentored over 120 graduate and postdoctoral students and over 60 undergraduates at the University of California, Irvine. Professor Shea and his students have published over 250 manuscripts, and awarded seven US Patents. He has given over 325 invited and plenary lectures at international symposia, academic and industrial institutions. Professor Shea has been a DuPont Visiting Research Scientist, a Winston Churchill College Overseas Fellow, Cambridge University, a NIH Senior International Fellow, a Fellow of the American Association for the Advancement of Science, an ACS Cope Scholar and he serves on committees to evaluate Physical and Life Sciences at the DOE Laboratories.



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2013 PMSE Fellow

James Wang

Kimberly-Clark Corporation



“For seminal contributions to the invention and commercialization of polymeric materials from functional polymers to sustainable biopolymers, and to the creation of novel modified polymers, reactive extrusion processes, and micro- and nano-structured polymer systems”

Dr. James Wang is a Research Technical Leader in Environmentally Sustainable Technology at Corporate Research and Engineering of Kimberly-Clark Corporation. He is currently focusing on developing environmentally and economically sustainable materials and technology solutions for Kimberly-Clark's global businesses. He is an industrial polymer scientist developing novel polymeric materials and was awarded with more than 210 granted patents worldwide including 88 granted U.S. patents. He has published 32 refereed articles and delivered more than 50 scientific presentations at international conferences and universities. He twice served on USDA's National Research Initiative on Biobased Products and Bioenergy Production review panel. He co-chaired several international symposia. He was the President of Northeast Wisconsin Chinese Association and is the Chairman of ACS Northeast Wisconsin Section.

He received a B.S. degree in Chemical Engineering from Northeast Forestry University (China) in 1982 and a M.S. degree from Virginia Tech in 1986. He earned his Ph.D. in Macromolecular Science and Engineering from Case Western Reserve University in 1991, under the direction of Prof. Virgil Percec, and published 25 referred articles on new ion-radical polymerization reactions and mechanisms, synthesis of novel aromatic polyethers, polyether ketones, and polyether sulfones, reactivity of macromonomers, and synthesis of graft copolymers.

Upon graduation, he joined Chevron Chemical Company to pursue his dream to invent a commercial polymer. While at Chevron he innovated reactive extrusion technology to create high-value functional polymers by performing chemical reactions in the melt-phase, leading to breakthrough inventions and commercialization of several functional polymer products including IMAC™ ionomers, EMAC+® and EBAC+® copolymers still on market today. At Kimberly-Clark, since 1994 he has applied polymer science

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fundamentals to solve challenging business problems related to polymeric materials and led research programs from conception to commercialization. His major technical contributions include biodegradable polymers, bio-based polymers, reactive extrusion, transforming natural biopolymers into thermoplastics, water-soluble polymers, polymer processing and rheology modifications, temperature-triggered polymers, hydrogel polymers, absorbent composites and structures, micro-porous functional polymers, multi-phased polymer architectures, micro-and nano-structured polymers, and sustainable packaging polymers. Most recently, Dr. Wang's contributions and leadership led to the successful commercialization of a broad range of sustainable products, including Huggies® Pure & Natural premium diapers, Scott® Naturals bath tissue, Scott® Naturals flushable wipes, Kotex® feminine products, and Scott® Shop Towels. He led a number of collaborative programs with industry and university partners and advised more than 60 junior scientists and co-op students. He has received 7 research excellence awards from Chevron and Kimberly-Clark.