

PMSE NEWS

Polymeric Materials: Science and Engineering Division of the American Chemical Society

FALL 2005

2005 PMSE Fellows

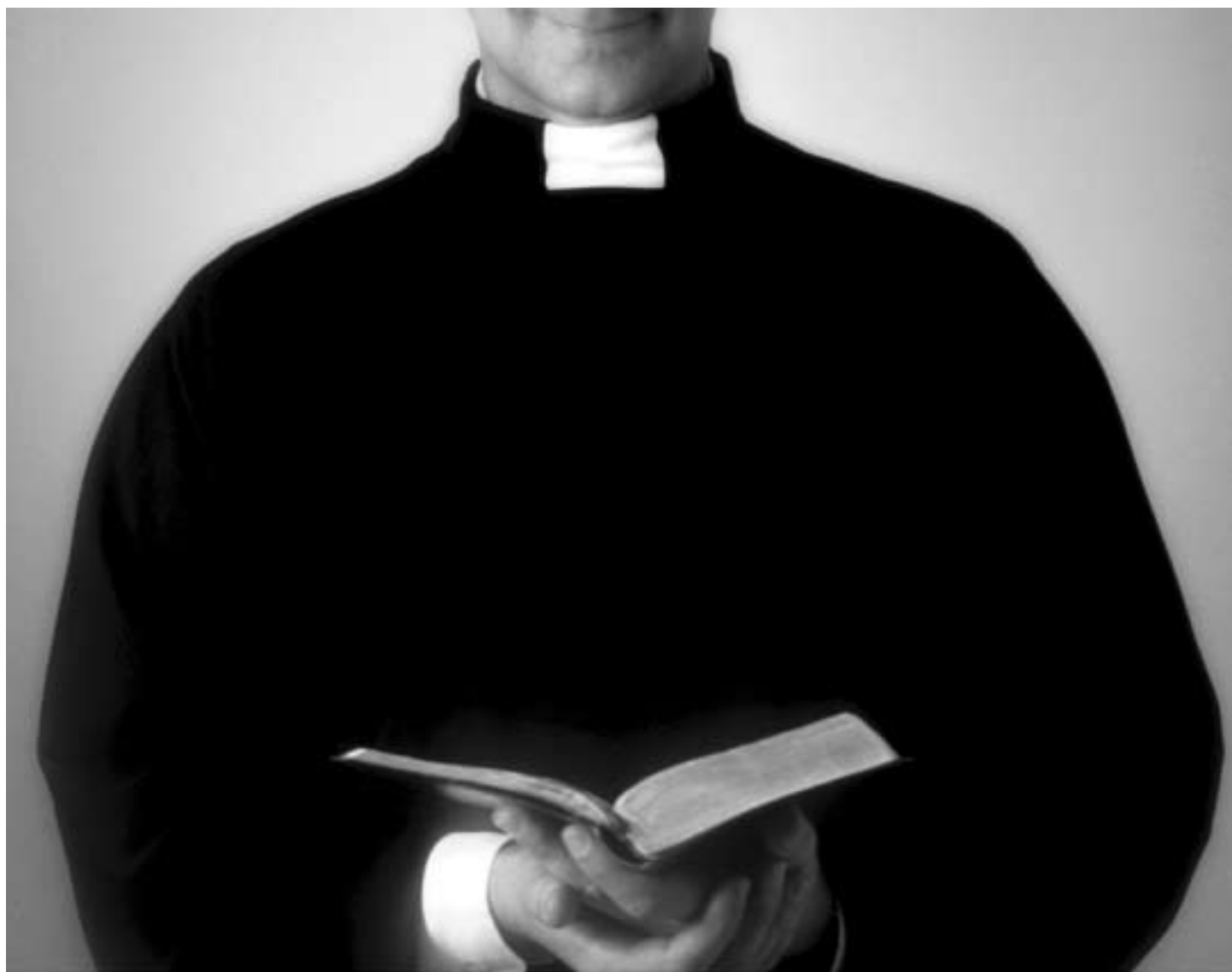


Dr. Eric J. Amis and Dr. David J. Lohse

Dr. Eric J. Amis, Chief of the Polymers Division of the National Institute of Standards and Technology, and Dr. David J. Lohse, Research Scientist at Exxon Mobil Corporation, were inducted as the sixth class of PMSE Fellows at the PMSE Awards Luncheon in San Diego Monday, March 14, 2005.

PMSE is pleased to welcome this distinguished pair of polymer scientists to the ranks of fellows. Please look for further information on them in the *PMSE Preprints*, *Chemical and Engineering News*, and in the Spring 2005 *PMSE News*. The Division thanks everyone who has helped in this process by submitting nominations or participating in the selection. The seventh class of PMSE Fellows will be inducted at the 2006 Spring meeting in Atlanta.

To learn more about all the PMSE Fellows, please visit <http://membership.acs.org/P/PMSE/awards/fellow.html>



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Program For Washington

August 28-September 1, 2005

PMSE sessions and meetings will be held at the Grand Hyatt Hotel Washington

Advances in Methods and Applications of Macromolecular Simulations. Barry Farmer, Air Force Research Laboratory, Materials and Manufacturing Directorate WPAFB, OH 45433, (937)256-9204, barry.farmer@wpafb.af.mil. Greg Rutledge, Dpt. of Chemical Engg, Massachusetts Institute of Technology Cambridge, MA 02139, 617-253-0171, rutledge@mit.edu.

Assembly of Polymers and Nanoparticles From 2D to 3D. Paula T. Hammond, Dept. of Chem. Engg., MIT, 77 Massachusetts Ave., Rm. 66-550, Cambridge, MA 02139, (617) 258-7577, FAX (617) 258-5766, hammond@mit.edu; Gleb Sukhorukov, Max Planck Inst. For Colloid & Interfaces Res., 14424, Potsdam/Golm, Germany +49-331-567-9429, FAX +49-331-567-9202, gleb@mpikg-golm.mpg.de.

Biologically enabled and bio-inspired polymers. Shu Yang, Materials Science and Engineering, University of Pennsylvania, 3231 Walnut Street, Rm 203 LRSM, Philadelphia, PA 19104, (215) 898-9645, Fax: (215) 573-2128, shuyang@seas.upenn.edu; Ulrich Wiesner, Cornell University 329 Bard Hall, (607) 255-3487, Fax: (607) 255-2365, uli@ccmr.cornell.edu.

Combinatorial Approaches to Materials. Eric Amis, NIST, 100 Bureau Dr., Stop 8540, Gaithersburg, MD 20899-8540, 301-975-6681, eric.amis@nist.gov; Cher H. Davis, NIST Combinatorial Methods Ctr., 100 Bureau Dr., Stop 8542, Gaithersburg, MD 20899-8542, (301) 975-6488, FAX (301) 975-4924, cher.davis@nist.gov; Alamgir Karim, NIST, 100 Bureau Dr., Stop 8542, Gaithersburg, MD 20899-8542, (301) 975-6488, alamgir.karim@nist.gov; Radislav A. Potyrailo, Combinatorial Chemistry Lab., GE Global Res. Ctr., P.O. Box 8, Schenectady, NY 12301, (518) 387-7370, FAX (518) 387-5604, potyrailo@crd.ge.com.

Fracture and Relaxations in Polymer Solids - in Honor of the 60th Birthday of Professor Albert F. Yee. Hung-Jue Sue, Department of Mechanical Engineering, Texas A&M University, College Station, TX 77843-3123, (979) 845-5024, FAX: (979) 862-3989, hjsue@tamu.edu; Christopher L. Soles, Polymers Division, National Institute of Standards & Technology, 100 Bureau Drive, stop 8541, Gaithersburg, MD 20899-8541, (301) 975 - 8087, FAX: (301) 975 - 3918, csoles@nist.gov; Qinghuang Lin, IBM T. J. Watson Research Ctr., P.O. Box 218, Rt. 134, MS 36-209, Yorktown Heights, NY 10598, (914) 945-2366, FAX: (914) 945-2141, qhlin@us.ibm.com; Raymond A. Pearson, Dept. of Mats. Sci. & Engg., Lehigh Univ., 5 E. Packer Ave., Bethlehem, PA 18015, (610) 758-3857, FAX: (610) 758-4244, rp02@lehigh.edu

Green Polymer Chemistry. Graham Swift, 10378 E. Church, Chapel Hill, NC 27517, (919) 960-0832, grahamswift@aol.com.

ICI Student Award Symposium. John S. Thomaidis, National Starch & Chemical Company, 10 Finderne Ave., Bridgewater, NJ 08807, (908) 685-5064, FAX (908) 685-7400, john.s.thomaides@nstarch.com.

International Symposium in Advances in Organometallic Polymers. Alaa Abd-El-Aziz, Univ. of Winnipeg, 515 Portage Ave., Winnipeg, Manitoba, Canada R3B 2E9, (204) 786-9944, FAX (204) 783-8910, a.abdelaziz@uwinnipeg.ca; Charles U. Pittman, MS State Univ., Dept. of Chem., Box 9573, Mississippi State, MS 39762, (601) 325-7616, FAX (601) 325-7611, cpittman@ra.msstate.edu; John Sheats, Rider Univ., Dept. of Chem., Lawrenceville, NJ 08648, (609) 895-5413, sheats@rider.edu; Martel Zeldin, Holbert & William Smith College, Dept. of Chem., Geneva, NY 14456, (315) 781-3613, FAX (315) 781-3860, zeldin@hws.edu; Charles E. Carraher, Florida Atlantic Univ., Dept. of Chem. & Biochem. And FL Ctr. For Environmental Studies, 500 NW 20th St., Boca Raton, FL 33431, (561) 297-2107, FAX (561) 297-2759, carraher@fau.edu.

Scattering from Polymers. Peggy Cebe, STC-208, Tufts Univ., Physics Dept., 4 Colby St., Medford, MA 02155, (617) 627-3365, FAX (617) 627-3744, peggy.cebe@tufts.edu; Benjamin S. Hsiao, Dept. of Chem., State Univ. of NY at Stony Brook, Stony Brook, NY 11794-3400, (631) 632-7793, FAX (631) 632-6518, bhsiao@notes.cc.sunysb.edu; J. David Londono, DuPont Experimental Station, E323/109B, P.O. Box 80323, Wilmington, DE 19880-0323, (302) 695-1222, FAX (302) 695-1513, j-david.londono@u.sa.dupont.com.

Tess Award Symposium in Honor of J. Edward Glass. Mark D. Soucek, Dept. of Polymer Engg., Univ. of Akron, Polymer Engineering Academic Ctr., 250 South Forge St., Akron, OH 44325, (330) 972-2583, FAX (330) 258-2339, msoucek@uakron.edu; Raymond H. Fernando, Dept. of Chem. and Biochem., CA Polytechnic State Univ., Polymers and Coatings Program, 1 Grand Ave., San Luis Obispo, CA 93407, (805) 756-2395, FAX (805) 756-5500, rhrefernan@calpoly.edu.

General Papers/New Concepts in Polymeric Materials. Elliot Douglas, Univ. of FL, Dept. of Mats. Sci. & Engg., P.O. Box 116400, 323 MAE, Gainesville, FL 32611, (352) 846-2836, FAX (352) 392-3771, edoug@mse.ufl.edu.

Joint PMSE/POLY Poster Session: General Papers/New Concepts in Polymeric Materials. Elliot Douglas, Univ. of FL, Dept. of Mats. Sci. & Engg., P.O. Box 116400, 323 MAE, Gainesville, FL 32611, (352) 846-2836, FAX (352) 392-3771, edoug@mse.ufl.edu.

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2005 Tess Award in Coatings Honors J. Edward Glass



Professor J. Edward Glass of the Polymers and Coatings Department at North Dakota State University has been selected to receive the Roy W. Tess Award in Coatings for 2005.

Professor Glass is recognized as one of the world's leading experts in the areas of water-soluble polymers and water-

borne coatings. He has published over 175 papers, received 6 patents and edited 7 books, based on symposia organized at American Chemical Society meetings. He has also presented numerous keynote lectures and plenary talks at national and international conferences, including Gordon Conferences in the US and in Europe, Fatipex Conferences, International Coating Expositions and the Athens International Coatings Conference.

Dr. Glass earned a B.S. in Chemistry from Louisiana State University in 1959 and a Ph.D. in Physical Organic Chemistry from Purdue University in 1964. He joined the Technical Center of Union Carbide in S. Charleston, WV in September of 1963. His first challenge came with an assignment working with Union Carbide's Texas City poly(vinyl chloride) [PVC] production facilities. Through fundamental studies of water-soluble polymers, the characteristics important to application properties could be determined, an approach used throughout Dr. Glass's career. In suspension PVC production it was surface dilational viscosities and adsorption that facilitated controlled particle porosity and morphology that, in turn, facilitated market acceptance and profitability by raising the plant's production output from 50% to full capacity.

This approach was followed in defining the role of components, primarily latex and thickener, and their interactions, on the shear related viscoelastic response of water-borne coatings and the latter's relation to flow out behavior in brush applications. A primary concern during this period was the need to remove mercury, used to prevent the enzymatic degradation of the thickener, from latex paints. His industrial research group successfully developed a commercial process to control the substitution pattern of ethylene oxide on cellulose, producing an enzymatically stable hydroxyethyl cellulose that has over the past two decades proven to be a real product of commerce in mercury free latex paints.

Continuing the coatings rheology studies, Glass defined, in a series of seminal studies, the role of dynamic uniaxial extensional viscosities in the spatter behavior of roll applied coatings. This was followed by a brief research program in surfactant-modified, water-soluble polymers (i.e., associative thickeners) that ended when early industrial competitors withdrew their products from the market. To coin a common industrial phase, this provided an opportunity to explore parameters that improved the mechanical, thermal-oxidative and gelation characteristics of water-soluble polymers used in a variety of petroleum recovery processes.

In 1980, Dr. Glass joined North Dakota State University as Professor in the Polymers and Coatings Department. At NDSU, in addition to a heavy teaching load, he led a research group that included studies on a broad spectrum of topics, but the group became best known for their focus on the synthesis, characterization and application studies of surfactant-modified, water-soluble polymers, particularly in the design of unique model associative thickeners based on Hydrophobically modified, Ethoxylated Urethane (HEUR) structures. Glass's group defined HEUR interactions with the numerous components (latex compositions and median particle size, coalescing aids, hiding pigments, colorants, and surfactant structures) in water-borne latex and water-reducible coatings. In addition to developing new polymers, his group has made significant contributions to understanding the relationships of extensional flows in petroleum recovery processes, combustion fuels, adhesives, and paper coatings. By using water-soluble polymer blends, his group was able to better qualify the role of extensional viscosities, defined in his earlier studies, on spatter in roll applications of coatings. In recent years, this understanding was used to define the roll of extensional viscosities in the spray application of water-borne coatings and high-solids coatings under different application parameters.

In addition to carrying out an active research program, Dr. Glass has organized numerous workshops and consulted with major coatings suppliers in the US and internationally.

Dr. Glass will receive the Tess Award from Dr. Benny Freeman, Chair of the PMSE Division, on Monday, August 29, during the Tess Award Symposium (Grand Hyatt, Independence B) at the 230th Meeting of the American Chemical Society in Washington, DC. Dr. Glass will present an Award Address at that time. An evening reception sponsored by the PMSE Division will follow the Award Symposium.

Learn more about the Tess Award in Coatings at <http://membership.acs.org/P/PMSE/awards/Tess.html>

Awards Luncheon in San Diego



Distinguished Service Award

PMSE Chair Benny Freeman (right) presenting the award plaque to winner Larry F. Thompson



ICI Student Award in Applied Polymer Science

2005 winner Christopher J. Ellison (left) with Carmine Iovine, ICI Group Vice-President of R&D



Cooperative Research Award

Left to right: Stephen Z.D. Cheng, Dave Schiraldi (CR Award Chair), Frank W. Harris, Bruce K. Winker

Applied Polymer Science Award in Honor of Craig J. Hawker



Craig Jon Hawker, born in January 1964 in Australia is the Winner of the **2005 ACS Award in Applied Polymer Science**. Craig's citation for this award is as follows: *"For the creative development of novel polymers with controlled structure and architecture and methods for their use as*

high performance dielectrics, recording media, and memory chips in the microelectronics industry".

At the relatively young age of 40 Craig Hawker has the distinction of being the co-inventor of three families of polymers that have been, or are being, implemented into commercial products with the potential to change the face of the microelectronics industry. An additional measure of the impact of this extraordinarily gifted young industrial scientist is found in the latest ISI 10-year tabulation of the 100 most cited scientists in the world for the period 1992-2003 for the entire field of chemistry (<http://www.in-cites.com/nobel/nov2002-chemistry-top100>). Craig Hawker is featured prominently in this group, which only includes 5 polymer scientists. With many seminal patents to his name, polymeric materials in commercial products, and a highly innovative research program with huge impact at the forefront of polymer science, it is clear that Craig Hawker is a most deserving winner of this very prestigious award.

Born and raised in Queensland, Craig received his B.Sc. with first class honours from the University of Queensland. The winner of numerous scholarships and fellowships he then joined the laboratory of Professor Sir A.R. Battersby at the University of Cambridge for his Ph.D. work. His thesis entitled "Biosynthesis of Vitamin B₁₂ - Model Studies on the Spiro Intermediate" was completed in 1988. From 1988 to 1990 he was a postdoctoral fellow in the laboratory of Professor J.M.J. Fréchet in the Department of Chemistry at Cornell University where he carried out seminal studies in the field of dendrimer chemistry, a collaboration which continues to this day. For the next three years, Craig Hawker was a Queen Elizabeth II Research Fellow at the University of Queensland in Brisbane, Australia. After returning briefly to Cornell in 1993 he joined the IBM Almaden Research Center in San Jose CA. where

he spent twelve exciting and productive years in the stimulating environment of the IBM Almaden Research Center. The year 2005 will mark a new milestone in Craig Hawker's career as he has recently accepted the position of Director of the Materials Research Laboratory and Professor in the Departments of Chemistry and Materials at the University of California, Santa Barbara.

Craig Hawker's work at IBM has been remarkable both for its innovative character and its practical bend. His work on hyperbranched polymers has led to the remarkable new family of low k polymer dielectrics that have enabled a quantum leap in circuit density for microelectronic chips. These polymeric materials, with closed shell pores useful to implement copper circuitry in microchip fabrication, have generated worldwide interest and form the basis of a new generation of commercial products. His novel crosslinked polymeric recording layer, based on the living radical polymerization chemistry, form the foundation of IBM's newest product for memories based on the "millipede" concept. Most recently, as was widely announced in the press, IBM has implemented a full development program for flash memory chips based on self-assembling block copolymer templates prepared using Hawker's living free-radical chemistry.

Craig Hawker's impact in Applied Polymer Science is based on an extremely creative and solid foundation of fundamental work. His creativity was apparent from his early work at Cornell, then at the University of Queensland, Brisbane, leading to seminal contributions in the chemistry of dendrimers and hyperbranched polymers. At IBM Almaden, Craig developed in 1994, the now widely used unimolecular alkoxyamine initiators for living radical polymerizations. This work is beautifully reviewed in *Chemical Reviews*, 101, 3661-3688, 2001. In 1995, he applied this novel chemistry to develop a general approach to the synthesis of star and graft polymers and copolymers with controlled architecture. This novel design has now been widely duplicated by many other research groups using a variety of living radical polymerization processes.

Another characteristic of Hawker is his ability to initiate collaborations with a variety of scientists and engineers of different backgrounds in order to draw the most from the materials he invents, thereby facilitating their commercial implementation. Collaborating with his friend and IBM colleague J.L. Hedrick, Hawker carried

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Hawker, cont.


out seminal work on a novel approach to the patternwise modification of surfaces by a novel surface initiated polymerization process now patented by IBM. Another model collaboration, in true partnership with Tom Russell (University of Massachusetts, Amherst), brought together skills in synthesis and polymer physics to produce a remarkable body of work that has earlier been rewarded with the ACS Cooperative Research Award. Yet another collaboration with chemists at Symyx technologies led to the development of high throughput techniques for the facile and reproducible construction of an enormously versatile array of functional stars.

In addition to his innovative contributions to both applied and fundamental polymer science, Craig has been tireless in his work for the polymer community as a whole. He organized and participated actively in many memorable conferences; he spearheaded a polymer synthesis thrust in a very successful NSF center involving Stanford University and IBM; he participated in outreach programs to introduce polymer science to young students, dazzling them with his presentations of real life applications of polymers. As those of you who have heard Craig Hawker speak at numerous ACS and other conferences can attest, Craig is also a remarkable communicator. This, coupled to his creative mind, experimental wizardry, and undeniable "people skills" will continue to propel him to the forefront of our discipline. It is indeed a great pleasure to celebrate the timely and well-deserved selection of Craig Hawker as the winner of this prestigious ACS Award in Applied Polymer Science.

For more information on the Applied Polymer Science Award, please see the Fall 2005 PMSE Preprints or visit <http://membership.acs.org/P/PMSE/awards/applied.html>

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~ Meeting Announcement ~

Innovation: The Engine for Growth

November 2-4, 2005, Cincinnati, OH

Join a select group of chemical industry leaders as they discuss why innovation is a necessity and not a luxury. With your peers you will investigate the forms innovation can take and the metrics to measure it. Over the course of this meeting you will examine innovation success stories. You will discuss innovation inside and outside the organization, consider domestic and international possibilities, and weigh options that exist both upstream and downstream in the supply chain.

Conference Chair

Louis Hegedus, Senior VP &&D, Arkema, Inc.

Keynote Speakers

Miles Drake, VP & CTO, Air Products]

Tom Connelly, Senior VP and CS & TO, Dupont

Other Speakers

Doug Berger, Managing Director, Innovation LLC

F. Peter Boer, President and CEO, Tiger Scientific

Gary Calabrese, VP and CTO, Rohm and Haas

Christian Collette, VP R&D, Arkema, France

Carol Dudley, VP R&D, Dow

Stan Gembicki, VP & CTO, UOP

Isy Goldwasser, President, Symyx, Inc.

Steve Lerner, Senior VP & CTO, Praxair

Kenan Sahin, Founder and CEO of TIAX

Ray Stark, VP & CTO, Honeywell Specialty Materials

Paul Stiros, President and CEO, NineSigma

James Trainham, VP Science and Technology, PPG Industries, Inc.

Conference registration includes complimentary attendance at the collocated AIChE Meeting.

Visit www.aiche.org/conferences/management for more information.

Co-sponsored by AIChE and ACS.

~ Meeting Announcement ~

Doolittle Awards Presented in San Diego



Doolittle Award

(Left to right) PMSE Chair, Benny Freeman, with Doolittle Award Winners Hsian-Rong Tseng and Takuzo Aida, and Doolittle Award Chair, Yu-chin Lai

Recent Doolittle Award Winners

Spring 2004 Meeting in Anaheim:

James R. Heath, David Steurman, Yi, Luo (Cal Tech), Hsian-Rong Tseng, Scott Vignon and J. Fraser Stoddart (UCLA), "Molecular Mechanics and Molecular Electronics"

Fall 2004 Meeting in Philadelphia:

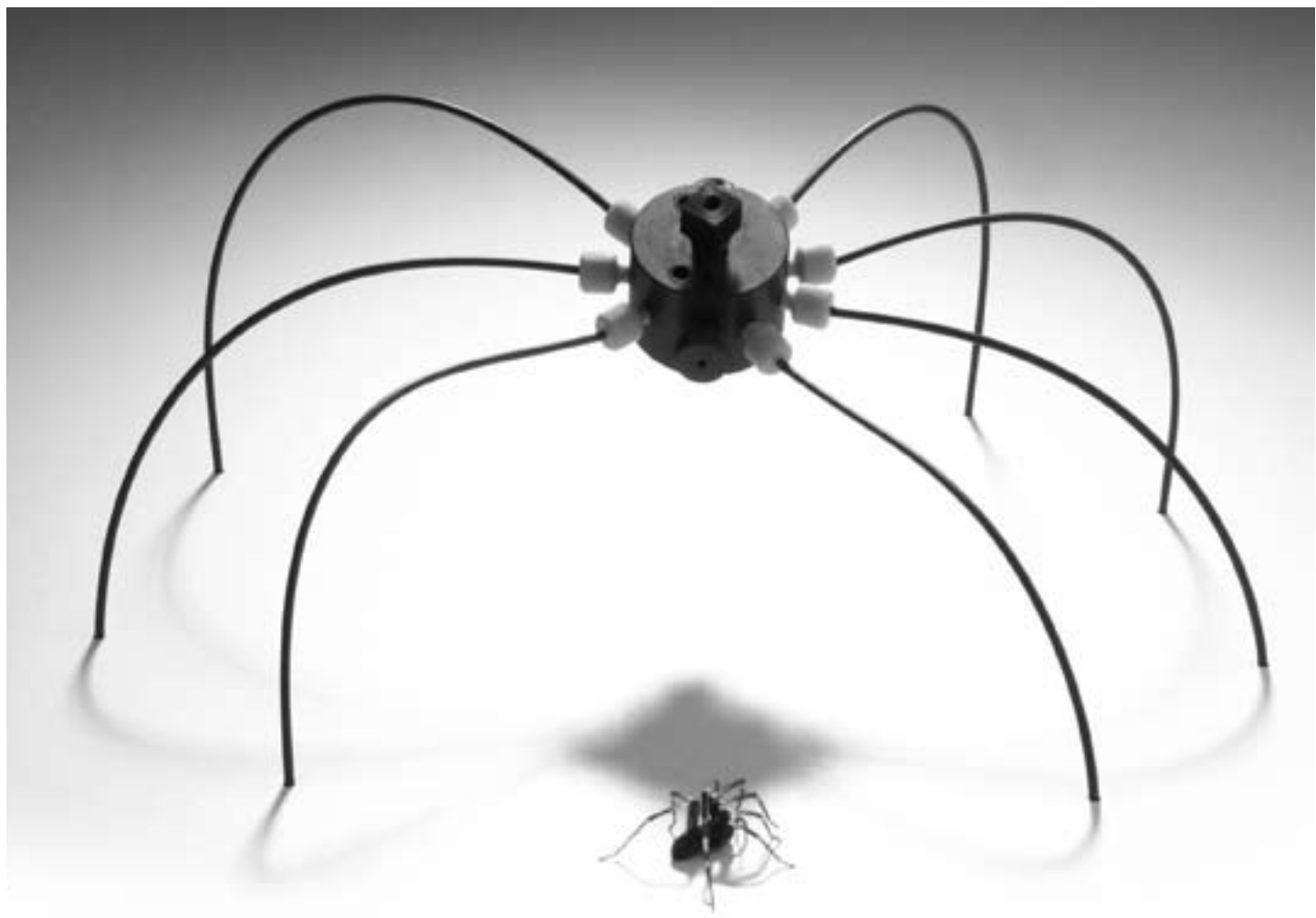
Takuzo Aida and Kazushi Kinbara (The University of Tokyo) "Functional Nanomaterials by Supramolecular and Macromolecular Approaches"

Spring 2005 Meeting in San Diego:

Paul F. Nealey, (University of Wisconsin), with the title "Directed Assembly of Imaging Materials for Nanolithography"

The Arthur K. Doolittle Award, established by the Union Carbide Corporation, is given to the authors of an outstanding paper presented before the Division at each national meeting of the ACS. A prize in the amount of \$1,000.00 is financed with the gift of royalties from A. K. Doolittle's book, *Technology of Solvents and Plasticizers*. All papers appearing in PMSE Preprints are evaluated on the basis of content, with emphasis on originality and development of new concepts, and on the quality of presentation. Recipients are selected by an anonymous panel of judges appointed by the Chairman of the Doolittle Award Committee.

For more information about the Doolittle Award, visit <http://membership.acs.org/P/PMSE/awards/doolittle.htm> or contact award chair Yu-chin Lai yu-chin_lai@bausch.com (716) 338-8711



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Election Candidates for Councilor

Charles Carraher

I welcome the opportunity to continue to serve PMSE and its membership, you, as Councilor and ask for your vote. The ACS and chemistry are at many critical crossroads. There are many balances that must be sought in many areas. These include topics such as out-sourcing and globalization. As balance points are sought, individual PMSE members must be considered and protected. The polymer landscape is rapidly changing. R & D is being choreographed, at times by those that do not understand the discovery process, and it is being truncated so that much of the long-range research and development efforts have disappeared. The ACS must take a stand with respect to these trends, pointing out the short-sightedness and damage that results from such practices. Polymer science is practiced in ever-increasingly diverse venues. PMSE and the ACS must recognize this and adapt and reach out to these diverse areas showing commonality and inclusiveness, but not lose sight of who we are. I have worked to represent PMSE membership for over three decades and ask that you allow me to continue to serve you in this very important role representing you as councilor.

Clara Craver

I am pleased to be asked again to be a candidate for Councilor representing PMSE in the American Chemical Society. When I received my 25th Year of Service Award in 2002, I looked forward to continued service in this capacity. My many years of serving as PMSE Councilor and on many committees of Council enable me to serve effectively in addressing needs of the Society as a whole, of the Divisions as one of the most important sections of the Society, and, specifically, of the Division of Polymeric Materials: Science and Engineering. I ask you for your vote for me to be your Councilor. I can represent us well in council and at ACS Headquarters if we need any special assistance.

I am proud to have authored, with Charles Carraher, the noted PMSE book on *Applied Polymer Science 21st Century*. Following is a description of prior service in ACS National Offices, Honors received, and related Society memberships and offices.

Service in ACS National Offices: Committee on Committees 1999-2001; Committee on Nominations and Elections 1994-96, 1989-90; Committee on Meetings and Expositions 1991-94, 1988; Consultant 1989-1990; Committee Associate 1998, 1981, 1978-79; Committee on Budget and Finance 1979-1987; Vice Chair 1981; Associate 1978; ACS History of Chemistry Task Force 1981-1982; Program Coordination Advisor 1977-1997; *ad hoc* Committee on Expositions 1985; Centennial Coordinating Committee 1976.

Service in ACS Offices: Member since 1947. Division of Polymeric Materials: Science and Engineering: Councilor 1978-2002, Chair 1974, Chair-Elect 1973, Treasurer, 1971-1972, Executive Committee, 1970-71; St. Louis Section: Nominations Committee 1979, 1977; Awards Committee Chair 1977-1978.

Related Activities: American Institute of Chemists, Fellow and Certified Professional Chemist 1980-2004; Coblenx Society Spectral data Manager, Principal Investigator on CRADA and NIST 1995-2004; Contributions in other Societies, International Meetings, Gordon Research Conferences, Technology and Assessment Programs, University-sponsored Short Courses, etc. run an additional twenty lines in my official ACS bio, but are omitted here in the interest of space and your time.

I ask for your vote as Councilor for PMSE in this election.

Ray A. Dickie

PMSE has been my principal ACS home for many years. Among other activities, I have served PMSE as Secretary, Vice-Chair, and Chair, and as General Secretary of the Macromolecular Secretariat representing PMSE. In other ACS activities, I was for several years one of the Councilors for the Detroit ACS Local Section. As Councilor, first for the Detroit Local Section of ACS and more recently for the PMSE Division, I have served on the ACS Council Committee on Constitution and Bylaws and on the Committee on Committees. Recently, I was asked to chair the Committee on Constitution and Bylaws, and will assume that position in 2006 if re-elected as PMSE Councilor.

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Election Candidates for Councilor

In other current professional activities, I am Editor of *Journal of Coatings Technology Research* and *JCT CoatingsTech* (both are publications of the Federation of Societies for Coatings Technology). I have also been active in the Adhesion Society, serving as its president in 2000 and 2001.

I am a graduate of the University of North Dakota (B.S.Chem) and the University of Wisconsin (Ph.D., physical chemistry). After a post-doctoral research at Glasgow University and Stanford Research Institute (now SRI International), I joined the Ford Motor Company Scientific Research Laboratories. During my career at Ford, my research centered on automotive paints and adhesives and related areas of polymer science. I am author or co-author of 100+ technical papers and 40+ U.S. Patents. My research awards include the Roy W. Tess Award in Coatings from PMSE, the Midgley Award of the ACS Detroit Local Section, and the Mattiello Award of the Federation of Societies of Coatings Technologies. I have received Distinguished Service Awards from PMSE (in 2004) and the Detroit Local Section (in 2000), and was a member of the first class of PMSE Fellows. Long residents of Michigan, my wife and I now live near Chapel Hill, NC.

David J. Lohse

David J. Lohse received B.S. degrees in both Physics and Computer Science from Michigan State University in 1974, and a Ph. D. in Materials Science from the University of Illinois in 1978. He then spent two years at the National Bureau of Standards in Gaithersburg, MD under an NSF-NRC Fellowship, working on the theory of polymer solutions with Isaac Sanchez. Since then he has worked for ExxonMobil Corporation, first in the Long Range Polymer Research Group of Exxon Chemical Co., and since 1987 in what are now the Corporate Strategic Research Labs of ExxonMobil Research & Engineering Co. in Annandale, NJ. His current research focuses on the thermodynamics of mixing polymer blends, nanocomposites, neutron scattering from polymers, the control of rheology by molecular architecture, polymer crystallization, the use of block and graft copolymers to enhance blend compatibility, and the application of such knowledge to develop improved polymer products. His research has resulted in over 90 publications (including a book on *Polymeric Compatibilizers*

written in 1996 with Sudhin Datta of ExxonMobil Chemical Co.) and more than fifteen patents. He has also served the PMSE division of the American Chemical Society in several capacities. Among these are Program Chair from 1991-94, Secretary in 1995, Chair in 1998, and chair of the Fellows Committee from 1999-2003. In 2003 he began a term as Councilor for PMSE. He was elected a Fellow of the American Physical Society in 2000 and a PMSE Fellow in 2005.

~ Voting Instructions ~

If you are a member in good standing of the PMSE Division, look for your official ballot, blank ballot envelope, and pre-addressed return envelope attached inside this newsletter.

Seal your cast ballot inside the smaller blank envelope, then seal inside the pre-addressed return envelope, sign, and return to the PMSE secretary.

Important! For your vote to count, be sure to leave the blank ballot envelope unmarked, and don't forget to sign the outer return envelope.

Ballots must be received before November 1.

List of Candidates (this is not the official ballot) Candidates for Councilor for 2006-2008 Term

Charles Carraher
Clara Craver
Ray Dickie
Dave Lohse

(The two receiving the most votes will become Councilor, the remaining two will become Alternate Councilor)

Candidates for Member at Large for 2006-2007 Term

Lisa Saunders Baugh
John Gilmer
Ellen Lee
David Martin
Dave Schiraldi
Leslie Sperling
Rich Vaia
Weiqing Weng

(The top seven will become Members at Large)

For questions about the election, please contact PMSE Secretary: Dr. Julie Jessop (319) 335-0681
julie-jessop@uiowa.edu

~ Don't forget to vote! ~

Election Candidates for Member at Large

Lisa S. Baugh

Lisa S. Baugh is a Research Associate at ExxonMobil's Corporate Strategic Research Laboratory in Annandale, New Jersey, where her research focuses on functional polyolefins and transition metal-catalyzed olefin polymerization. She received her B.S. Chemistry degree from the University of Texas and her Ph.D. from U. C. Berkeley (as an NSF Predoctoral Fellow), having carried out the last two years of her Ph.D. work in the Polymer Science & Engineering Department of the University of Massachusetts, Amherst. She has been with ExxonMobil since 1997 and has authored a number of technical publications and patents. These include two edited books (*Late Transition Metal Polymerization Catalysis* and *Transition Metal Catalysis in Macromolecular Design*), with a third edited book on stereoregulating polymerization to be published in 2006 by CRC Press.

Dr. Baugh has served PMSE Division in a number of positions since 1998, most recently as 2004-2005 Membership Chair and previously as Awards Publicity Coordinator, Member-at-Large, Catalysis & Surface Science Secretariat Representative, and member of the Electronic Preprints Committee. Recently she has worked to increase PMSE's presence at regional ACS meetings and to increase circulation and access to *PMSE Preprints* and hopes to continue these activities as a 2006-2007 Member-at-Large. In other areas of ACS, she has served as CATL Secretary-General / Program Chair and as an Associate of the ACS Women Chemists Committee. She currently sits on the Editorial Advisory Board for the ACS magazine *Chemistry* and has written a number of feature pieces for college and high school chemistry textbooks. She is also a member of the ACS POLY and CINF divisions, Alpha Chi Sigma (Beta Theta Chapter), and the National Association of Science Writers.

John Gilmer

John Gilmer is presently employed as a Research Associate at Eastman Chemical Company in Kingsport, Tennessee where he is currently involved in the R & D of high performance polyesters. He received his B.S. in Chemistry from the College of William and Mary and his Ph. D. in Physical Chemistry from the University of Massachusetts. From 1983 to 1985, he was a postdoctoral fellow with Professor H.-G. Zachmann at the University of Hamburg.

Prior to his employment at Eastman Chemical Company, Dr. Gilmer worked from 1988 to 1994 in the Advanced Materials Laboratory at EniChem America. From 1985 to 1988, Dr. Gilmer served as a member of the Materials Science and Engineering faculty at Penn State University.

His research and development activities at Eastman have focused on the engineering uses of copolyesters, polymer weathering and stabilization, coatings and surfaces of polyesters, polyester resins for calendaring, polymer blends, and high barrier nanocomposite materials for packaging applications. Dr Gilmer's contributions include approximately 50 publications and patents.

Ellen Lee

Ellen Lee is a Technical Specialist in the Plastics Research group at Ford Motor Company's research laboratory in Dearborn, Michigan. She earned her B.S. in chemical engineering from Northwestern University in 1993 and her Ph.D. from the University of California, Berkeley in 1998, also in chemical engineering. Her graduate research involved fundamental measurements of single chain polymer dynamics using flow light scattering techniques. These measurements, along with rheological behavior of bulk systems, allow better modeling and understanding of complex processing conditions. Her work in this area secured her the ICI Student Award in Applied Polymer Science in 1997. Dr. Lee's current research at Ford is in the area of novel filler polymer composite materials, including nanocomposites and natural fiber reinforced composites. She has studied aspects of material development, effect of fillers on structure property relationships, as well as the effects of processing conditions on material mechanical properties. In 2002, she was awarded the ACS Regional Industrial Innovation Award for her work on nanocomposites. She has given four invited talks and holds four U.S. patents (issued and pending). Dr. Lee has been a member of ACS since 1998 and is a member of the PMSE technical division. She has been active as a member-at-large and has also served on the electronic preprints committee for PMSE.

David Martin

Prof. David C. Martin is the Director of Macromolecular Science and Engineering and Professor of Materials Science and Engineering at the University of Michigan. He is a fellow of the American Institute of Medical and Biological Engineering. His research interests include the high resolution imaging of defect structures in ordered polymers and organic molecular crystals, and the development of soft, bioactive polymer coatings for neural prosthetics. He received a Ph.D. in Polymer Science and Engineering with Prof. Edwin L. Thomas at the University of Massachusetts at Amherst, and was a Humboldt Fellow in the laboratory of Prof. Gerhard Wegner at the Max-Planck Institute for Polymer

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Research in Mainz, Germany. He received an MS in Macromolecular Science and Engineering and a BS Eng. in Materials and Metallurgical Engineering from the University of Michigan.

Dave Schiraldi

David A. Schiraldi is currently an Associate Professor of Macromolecular Science & Engineering at Case Western Reserve University (CWRU). Prior to moving to academia in 2002, Dr. Schiraldi held various R&D positions for Celanese/ Hoechst Celanese/KoSa over a 20 year career, working in chemical catalysis, development of engineering plastics, polymer recycle, and longer range research in polyester polymers and monomers. While in industry, Dr. Schiraldi successfully developed and commercialized a number of new products and processes in the PET and PBT product areas, established, and managed and actively participated in the Hoechst Celanese/KoSa university-based research program. At CWRU, the Schiraldi research group is working in the areas of polymer nanocomposites, polymer blends, and catalysis of condensation polymerizations; new activities include design and synthesis of metal chelating polymers, new methods for polymer recycle, and development of polymers from renewable resources.

Personal Statement: As PMSE is the place where fundamental science and practical applications of polymers come together within the ACS, this division has long played an important role in my development as a scientist. I am excited about the opportunity to give back to the division and our scientific community, and am especially interested in contributing in areas of technical program planning and new, innovative methods for attracting young people into the sciences.

L. H. Sperling

Dr. Sperling got his B.S. from the University of Florida in 1954, his M.S. from Duke U. in 1957, and his Ph.D. from Duke University in 1959. After a five year stint as a research chemist with Buckeye Cellulose Corporation and a two year post-doc with Prof. Tobolsky at Princeton University, Dr. Sperling joined the Chemical Engineering Dept. and also the Materials Research Center at Lehigh University. His polymer research emphasized interpenetrating polymer networks, especially synthesis, morphology and mechanical behavior, sound and vibration damping with polymers, renewable resources, and the molecular basis of fracture in plastics. He is the author of five books, with the fourth edition of *Introduction to Polymer Science and Engineering* due out in November. He and his students authored over 350 research papers

in the field of polymers. Currently, he is professor emeritus at Lehigh, and still involved in both writing and consulting.

Richard A. Vaia

Richard A. Vaia is the Research Leader for the Polymer Core Technology Area at the U.S. Air Force Research Laboratory's (AFRL) Materials and Manufacturing Directorate. His research group focuses on polymer nanocomposites, photonic technologies and their impact on developing adaptive soft matter. He is also serving as technical lead for a variety of programs including Nanomaterials with the Materials and Manufacturing Directorate. Coinciding with his work at AFRL, Dr. Vaia was adjunct professor at the Air Force Institute of Technology from 1996 to 1999 and the University of Akron from 2003 to present. He received his PhD degree in materials science and engineering at Cornell University in 1995 and was a distinguished graduate from Cornell's AFROTC. He separated from the Air Force in 1999 as a Captain after his final assignment at AFRL. His honors and awards include the Air Force Outstanding Scientist (2002), Air Force Office of Scientific Research Star Team (2002-2004; 2005-2007) and the National Defense Science and Engineering Fellowship. Rich serves on the editorial board of Chemistry of Materials and has authored over 70 peer-reviewed papers.

Weiqing Weng

I am currently a Senior Staff Chemist in the Chemical R&D department of ExxonMobil. I received my Ph.D. in chemistry from University of Utah in 1991 and have been with ExxonMobil since 1994, mainly working in the polyolefin-related areas such as metallocene polypropylene, long chain branched polyolefins, anionic isobutylene polymerization, and elastomer nanocomposites. I hold 15 issued US patents with another 10 pending, and have more than 30 publications in peer-reviewed journals.

I have been an ACS member since 1991 and recently served as a PMSE representative in the CATL secretariat. I co-organized the International Conference of Polyolefins sponsored by Texas section of SPE in 2001 and 2002. Over the years, I have benefited greatly from ACS and PMSE in my professional and career development. I wish I could do the same thing for my ACS colleagues. By serving as a member-at-large and membership chair, I am looking forward to contributing to the PMSE activities, providing service to our PMSE members, as well as encouraging more ACS members to join the PMSE division.

Don't forget to vote!

A Look Ahead: PMSE Programming for Atlanta

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ATLANTA - March 26-30, 2006

Assembly, Structure, and Dynamics of tethered Polymer Systems. S. Michael Kilbey II, Dept. of Chemical Engineering, Clemson University, Clemson, SC 29634. Phone: (864) 656-5423, mkilbey@clemson.edu ; Igor Luzinov, School of Materials, Clemson University, Clemson, SC 29634. Phone: (864) 656-5958, luzinov@clemson.edu ; Sergiy Minko, Department of Chemistry, Clarkson University, Potsdam, NY 13699. Phone: (315) 268-3807, sminko@clarkson.edu

Complex Fluids in Confined Spaces. Case Western Reserve University, Department of Macromolecular Science and Engineering, 312 Kent Hale Smith Building 2100 Adelbert Road, Cleveland, OH 44106, (216) 368-5861, Fax: (425) 732-7953 patrick.mather@case.edu ; Andrey V. Dobrynin, University of Connecticut, 97 N. Eagleville Rd., University of Connecticut, Storrs, CT 06269-3136, 860-486-9061, savd@ims.uconn.edu ; Michael Graham, University of Wisconsin, 3010 Engineering Hall, 1415 Engineering Drive Madison, WI 53706-1691, (608) 265-3780, graham@engr.wisc.edu

Cooperative Research Award. David Schiraldi, Case Western Reserve Univ., 2100 Adelbert Rd., Cleveland, OH 44106-7202, (216) 368-4243, FAX (216) 368-4243, das44@po.cwru.edu

Electrostatic Polymer Processing. Gary Wnek, Case Western Reserve Univ., Dept. of Chem. Engg., Cleveland, OH 44106, (216) 368-2728, gew5@case.edu ; Suresh L. Shenoy, Department of Chemical Engineering, Case Western Reserve University, A.W. Smith Bldg, Cleveland, OH 44106-7217, (216) 368-0075, Fax: (216) 368-3016, suresh.shenoy@case.edu

Highly Branched and 3-Dimensional Polymers at Interfaces. Craig J. Hawker, IBM Almaden Res. Ctr., 650 Harry Rd., San Jose, CA 95120, (408) 927-2377, FAX (408) 927-3310, hawker@almaden.ibm.com ; Sergey Sheiko, Dept. of Chem., Univ. of NC, Chapel Hill, NC (919) 962-2388, FAX (919) 843-5270 sergei@email.unc.edu ; Vladimir V. Tsukruk, Mats. Sci. & Engg. Dept., IA State Univ., Ames, IA 50011, (515) 294-6904, FAX (515) 294-7202, vladimir@iastate.edu

Micro- and nano-scale patterning via multi-photon activated processes. Stephen M. Kuebler, Department of Chemistry and College of Optics & Photonics: CREOL & FPCE, University of Central Florida, P.O. Box 162366, 4000 Central Florida Blvd., Orlando, FL 32816-2366, (407) 823-3720, Fax: (407) 823-2252, kuebler@mail.ucf.edu ; Joseph W. Perry, School of Chemistry & Biochemistry, Georgia Institute of Technology, 770 State Street Atlanta, GA 30332-0400, 404-385-6046, Fax: 404-385-6057, joe.perry@chemistry.gatech.edu ; Kevin D. Belfield, Department of Chemistry, University of Central Florida, P.O. Box 162366, 4000 Central Florida Blvd., Orlando, FL 32816-2366, (407) 823-1028, Fax: (407) 823-2252, kbelfiel@mail.ucf.edu

Polymer Bioconjugates for Therapeutic Applications. Heather D. Maynard, Dept. of Chem. & Biochem., Univ. of CA, P.O. Box 951569, Los Angeles, CA 90095-1569, (310) 267-5162, FAX (310-825-0767), maynard@chem.ucla.edu

Polymers in Microelectronics and Optoelectronics. Clifford L. Henderson, George Inst. of Tech., 311 Ferst Dr. NW, Atlanta, GA 30332-0100, (404) 385-0525, FAX (404) 894-2866, cliff.henderson@chbe.gatech.edu

Polymers for Nanoscience & Nanotechnology: Organic, Inorganic, and Composite Materials. Todd Emrick, Dept of Polymer Science & Engineering, 120 Governors Drive, University of Massachusetts Amherst, Amherst, MA 01003, (413) 577-1613, Fax: (413) 545-0082, tsemrick@mail.pse.umass.edu ; Robert B. Grubbs, Department of Chemistry, Burke Laboratory HB6128, Dartmouth College, Hanover, NH 03755, (603)-646-9096, Fax(603)-646-3946 robert.b.grubbs@dartmouth.edu; Jeffrey Pyun, Department of Chemistry, University of Arizona, 1306 E. University Blvd., Tucson, AZ 85721-0041, 520-621-6354, Fax 520-621-8407 jpyun@email.arizona.edu.

Polymer Transducers (co-sponsored with POLY. POLY is primary). T. Long, Dept. of Chem., Virginia Polytechnic Inst. and State Univ., Blacksburg, VA 24061-0344; Donald J. Leo, Dept. of Mechanical Engineering, Virginia Tech, Center for Intelligent Materials, 307 Durham Hall, Blacksburg, VA 24061; Robert B. Moore, Dept. of Polymer Sci., The University of Southern MS, 118 College Dr # 10076, Hattiesburg, MS 39406; Mathew S. Bratcher, Multifunctional Materials Branch, U.S. Army Research Laboratory, AMSRD-ARL-WM- MA, 4600 Deer Creek Loop, Aberdeen Proving Ground, MD 21005.

Polymers for Enabling Nanoscale Patterning. (co-sponsored with POLY. POLY is primary). Kenneth R. Carter, Dept. of Polymer Sci. & Engg., Univ. of MA, 120 Governors Dr., 416 Conte Building, Amherst, MA 01003

General Papers/New Concepts in Polymeric Materials. Elliot Douglas, Univ. of FL, Dept. of Mats. Sci. & Engg., P.O. Box 116400, 323 MAE, Gainesville, FL 32611, (352) 846-2836, FAX (352) 392-3771, edoug@mse.ufl.edu

Joint PMSE/POLY Poster Session: General Papers/New Concepts in Polymeric Materials. Elliot Douglas, Univ. of FL, Dept. of Mats. Sci. & Engg., P.O. Box 116400, 323 MAE, Gainesville, FL 32611, (352) 846-2836, FAX (352) 392-3771, edoug@mse.ufl.edu

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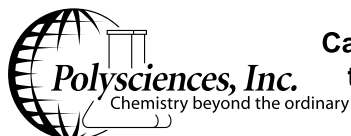
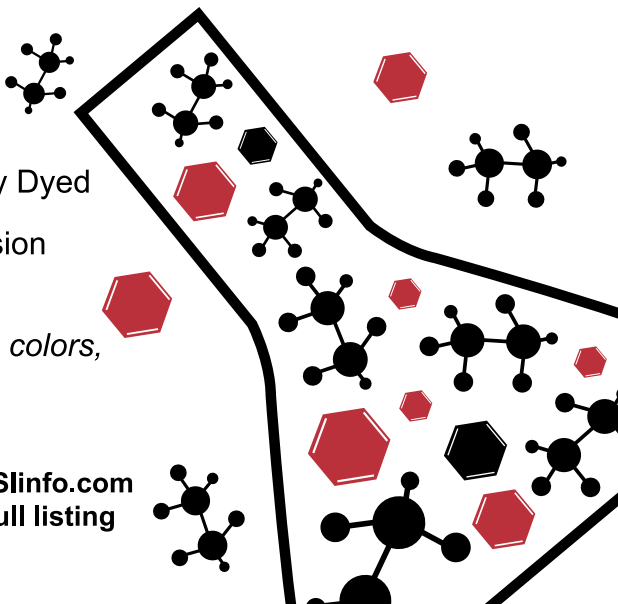


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