

SPE THE SPECIALIST

2012 MEGATECH – Operation 2nd Operations

Tuesday, November 13, 2012

9:30 am – 3:00 pm (Registration at 9am)

Pre-registration Strongly Encouraged

Hennepin Technical College (Room J-120)

9000 Brooklyn Blvd

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OVERVIEW

Take this opportunity to learn about 2nd Ops to plastic parts. Once the plastic part is manufactured; how does it get decorated, assembled and packaged? Local experts will demonstrate and share their knowledge on these topics!

Topics:

- Pad Printing and Laser Etching • Contract Manufacturing & Assembly
- Heat Staking & Sonic Welding
- Adults w/ Disabilities in Manufacturing
- Packaging • Painting & Plating

Presenters

Accumark, BTW, Powell-McGee, Merrick, Service-Litho

Presentations of the Jerome Formo Scholarship Award to be presented at MegaTech

Registration

Advance Reservation by November 9th: **SPE Members:** \$100 **Non-Members:** \$125.00

All Registration after Nov 6th: \$150.00 **Student with ID:** \$40.00

4 or more from same company (must register together) : \$100 **SORRY – NO REFUNDS!**

Snacks, Lunch and Conference are included in costing.

Registration – (Credit Cards now accepted)

Register NOW at www.uppermidwestspe.org • For reservations or questions, email Dan Mishek (dan@vistatek.com).

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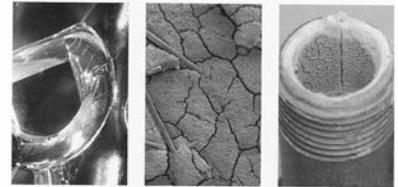
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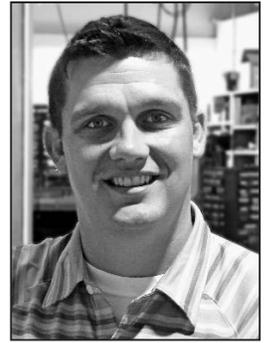
President's Remarks

Dan Mishek

As the incoming president of the section, I would like to thank the board for putting their trust in nominating me. This is a difficult role to fill from the excellence that the past two presidents have shown in leadership and professionalism. Special thanks are in order for Richard Bopp, the past president and for Paul Rothweiler (section president before Richard). Richard and Paul were able to establish new programs, reach out to the students and grow a sustainable scholarship program!

A few of my goals are to stay true to the previous leadership. It would be great to continue the education and to grow scholarships for people that want to embrace the plastics, chemistry, science and manufacturing world. This can only be accomplished by section involvement, personal improvement, an active membership and an active board. This is your time to make a difference in the industry that serves you.

We encourage and welcome new members, new ideas and new board members. Please contact me personally to see how SPE can be a win/win relationship for you. Whether it is networking, education, technical support or just a better group of friends, SPE is here for you!



Past President's Remarks - September 17, 2012

Dick Bopp

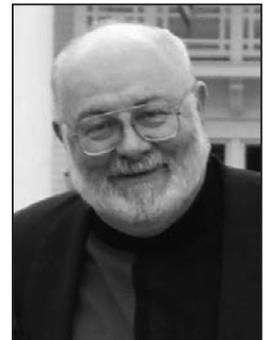
This is the first opportunity that I have had to address our Section as Past-President. It has certainly been my great pleasure to have served as your president for the past three plus years. I remember like it was yesterday the luncheon meeting at the Four Points Sheraton Hotel where I was voted into office...and wondering at the time what I had just gotten myself into. Coincidentally, it happened to be on the very same day as President Obama's inauguration, January 20th, 2009. My three terms in office were extended just a bit until June 30th of this year to get us back in sync with the SPE's fiscal calendar, but my time in office seems to have passed by in a flash. Special thanks to my predecessor, Paul Rothweiler, for his adept mentoring which greatly helped me transition into my new role.

As I now look back, I can see that our Section has accomplished a great deal in that time: For example, we held several magnificent MegaTEC's and MiniTEC's presenting the latest of a wide range of new technologies to our membership. Special thanks to Sean Mertes, our outgoing Technical Program Chair; Paul Rothweiler, Dan Mishek (Interim Program Chair), Verne Erickson, Tom McNamara and many others for organizing these great events.

I am also especially pleased that we made it our priority to recognize notable individuals who have over the years made outstanding contributions to our Section and the plastics industry overall. For example, we honored Prof. Dan Ralph, Director of the Plastics Manufacturing Program at Hennepin Technical College, with an award for his outstanding contribution to plastics education in our region. We also established the Upper Midwest SPE Plastics Hall of Fame citing as inaugural honoree past president, Mr. Tony Norris, for his lifetime contribution to the Society and plastics industry. Special thanks go to Verne Erickson, Dave Erickson and Tom McNamara for their hard work in making these deserving recognitions a reality.

Also, this year we made a major initiative in support of plastics education by launching not one, but THREE annual scholarships to encourage, support and recognize outstanding students in the region who are pursuing careers in plastics and polymer science and engineering. Very special thanks to our councilor and co-education committee chair, Paul Rothweiler, and co-education chair (past-Councilor) Tom McNamara for their dedication, persistence and creativity in establishing these new scholarships. Thanks also to the entire board for their foresight and long term commitment to plastics education by voting for the funding for these scholarships on a continuing basis.

As I write this, I'm moved by the outstanding support given by each and every volunteer member of our board without whose help none of these accomplishments would have been possible. Those board members and officers not already mentioned include Ajay Gupta (outgoing Secretary), Shilpa Manjure (Secretary), Marv Grussing (Treasurer), Mahin Shahlari (Membership Chair & Technical Editor for The SPEcialist), Bill Priedeman (Advertising Chair), Rolly Enderes (Webmaster and Managing Newsletter Editor), Tim Spahr (outgoing Membership Chair) and Eric Swensied (Networking and Golf Outing Chair). Thank you all! I value your friendship and truly appreciate all that you have done on behalf of SPE. I now look forward to continuing our work together under Dan Mishek, our most capable new president, who has already outlined plans for a very exciting year ahead.



SPOTLIGHT ON THE BOARD



Paul Rothweiler

Councilor - Upper Midwest Section

Paul joined the Upper Midwest Section's Board in 2004. In a few short years Paul was elected President and helped to foster the energy of the Board members in creating many of the programs we enjoy today. He is still an active Board member, current Councilor for the Upper Midwest Section, and Co-Chair for the Scholarship Committee. In addition he is also a Board Member of the Engineered Properties and Structures Division (EPSDiv) and the Chair of its Internet Communications Committee.

Paul is the Vice President of Technology Development at Aspen Research Corporation, a leading contract research firm and toll-manufacturer in Maple Grove Minnesota that works with a wide variety of plastics, composites, bio-materials, sealants and adhesives. In that capacity Paul works closely with Aspen's clients to develop new products and materials. Paul is a frequent speaker at conferences on product ideation, development and commercialization.

Paul's start in industry was performing indole synthesis research under Dr. Waylan Noland at the University of Minnesota. Dr. Nolan answered a call from 3M to send over "one of his promising students" to work on synthesizing polymer dyes in their Graphics Research Lab. This was Paul's first step away from 'molecules' and on his way to 'polymers.' Paul moved to H.B. Fuller in 1984 to join their Polymer Research Lab where he worked on developing radically-initiated polymers in aqueous (latex) and solvent systems, winning H.B. Fuller's Technical Achievement Award. Paul created coatings and adhesives to stick to plastics (among many other substrates) while at H.B. Fuller, but it wasn't until he joined Aspen Research Corporation that he finally reached the pinnacle of his career and had the opportunity to work intimately with plastic professionals. Paul acknowledges and is grateful for all the support he has received in making the transition from polymers to plastics from his colleagues at Aspen and within SPE. Paul intends to be an active member of SPE for many years to come and encourages others to learn more about the society, and for members to make it 'the' place for plastic professionals to come together and share their knowledge.

WELCOME TO OUR NEW MEMBERS

We hope you are taking full advantage of your SPE membership and getting involved in your chapter activities. Mini-Techs, Mega-Techs, golf outings and award ceremonies are all great places to meet other SPE members and expand your network. If you would like to be more active in your chapter we would welcome your participation on the board and the committees. You can also help us grow by telling your friends and co-workers about the SPE Upper Midwest Chapter. Please welcome our newest members.

New Member	Affiliation	City	New Member	Affiliation	City
Sharon McCord	McCord Consulting Group Inc.		Andrew Paye	Hennepin Technical College	
Nicholas Hietala	Andersen Corporation		Dennis Obare	Hennepin Technical College	
Paul Martinson	3M Company		Gboyega Atibioke	Hennepin Technical College	
Sinan Yordem	3M Company	Minneapolis, MN	Lobel Mawolo	Hennepin Technical College	
Tim Trom	Minimizer		Yawo Adokpo	Hennepin Technical College	
Patrick Gronlund	Andersen Windows	Saint Paul, MN	Lee Rieth	Segetis, Inc	
Stephen Anderson	General Mills	Golden Valley, MN	Carl Carlson	Zirc Company	Buffalo, MN
Kyle Starkey			Dave Fosse	Lindar	Baxter, MN
SHIGERU Aoyama	U of MN CEMS		Martin Larsen	Minimizer	Blooming Prairie, MN
Steven Flanagan	3M		John Grant	3M	Saint Paul, MN
Kevin Bevis	Entegris		Vincent Berger	Arburg, Inc.	Vadnais Heights, MN
John Thibado	Advanced Extrusion Inc.		Jake Nelson	Steinwall, Inc	Minneapolis, MN
Mark Newman	DAC Industries		Susan Mantell	University of Minnesota	Minneapolis, MN
Jason McNulty	University of Wisconsin-Madison	Stillwater, MN	Michael Crump	CGI	Eden Prairie, MN
Rick Peters	Bamberger Polymers	Maple Grove, MN	Dan Saande	Gemstar Manufacturing	Cannon Falls, MN
Maanshii Wu	Boston Scientific Corporation	Maple Grove, MN	Steven Brady	TSI INC	Shoreview, MN
Clark Stoel	Fey Industries	Edgerton, MN	Jon Hoogenakker	Micromedics Inc	Inver Grove, MN
Claude Cybulski	3M Company	Saint Paul, MN	David Haakana	Hennepin Technical College	LONSDALE, MN
Jeff Pedersen	Entegris	Chaska, MN	Kenton Geer	Kenton Geer Design LLC.	RED WING, MN
James Boeshans	MacDermid Autotype	Excelsior, MN	Madhusudan Chari	3M	Oakdale, MN
Krag Anderson	Nature Works LLC		Christopher Krohe	3M	Saint Paul, MN
Stephen Little	ProMed Molding				
Aaron Flaherty	Hennepin Technical College				

Another Big Success At MiniTec

Minnesota Rubber & Plastics (MR&P) gave a great presentation to our section on May 15th highlighting the in's & outs of rubber molding. This was a request from our chapter to learn more about the rubber industry and MR&P stepped up. The presentation was given by Aron Yngve (Marketing Director) and Tim Reski (Director of Material Science).

After the presentation, MR&P opened up their facility at 1100 Xenium Lane North in Minneapolis for a company tour. This was the first time this SPE has had a tour after a MiniTec. It seemed to be a nice fit to hear about the technology then have the opportunity to see it first-hand.

And to be sure that we gave an opportunity to unwind after the great presentation and tour, the section ventured over to Woody's for a networking/happy hour. A good time was had by all. Thank you to all the participants and the presenters!



Tim Reski



Aron Yngve



The Polymer Lab offers thermal, chemical and rheological testing of polymer raw materials through finished plastic parts.

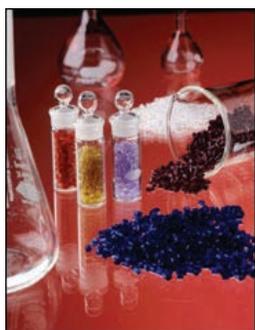
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SCHOLARSHIPS

The Scholarship Committee has been working with the college plastics programs in our Section to assist students with their applications for the Upper Midwest Section's Jerome Formo Award. We are also finalizing the guidelines for Founders Award submissions (all information for the Section's scholarships are on our Section's website at <http://www.uppermidwestspe.org/edu.htm>). If you know any students that meet the requirements for either of these awards, pay close attention to the submission criteria and cut-off dates for the submissions. The cut-off date for the Jerome Formo award is October 26th. Incomplete submissions will not be accepted.

We also want to congratulate David Haakana, the winner of the 2012 Tony Norris Award. David and his sponsor Dan Ralph were present at the May 15th MiniTec to receive the award, and was congratulated by many plastics professionals present, making the award ceremony a very special event. David is a great example of someone with a passion for plastics and we expect he will have a very rewarding career in the plastics industry. We look forward to presenting you the 2013 Tony Norris award winner at our 2013 Spring MiniTech. Cut-off date for 2013 Tony Norris submissions is March 20, 2013.

FOR MORE INFORMATION, CONTACT:

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Thomas McNamara at 952-933-9438 / thomas.mcnamara@thermotech.com

OCTOBER SCIENCE CORNER

Joining of Polymers and Polymer–Metal Hybrid

Structures: Recent Developments and Trends

Joining is an important secondary operation in plastic industry which is extensively studied in the article by S.T. Amancio-Filho and J.F. dos Santos from the Solid State Joining Processes (WMP), Materials Mechanics, Institute of Materials Research, GKSS Forschungszentrum Geesthacht GmbH, Geesthacht, Germany, published in the issue 49 of the Journal of Polymer Engineering and Science (2009), pages 1461–1476. This article is shortened for this Science Corner with a focus on plastic welding techniques:

In theory, an ideal component should not present joints, which can deteriorate mechanical strength. Nevertheless, the size of a component is usually limited by its production process. In this manner, a “joint-free” concept is unrealistic. Moreover, the crescent designing of hybrid structures, where different classes of materials are present, often requires the presence of joints. Therefore, the constant understanding and development of available and new joining techniques is a key-subject in the industry. The main joining methods for polymer and polymeric composites are mechanical fastening, adhesive bonding, and welding.

While thermosets and thermoplastics can be adhesively bonded and mechanically fastened, welding can be only performed on thermoplastics. This is explained because welding relies on the fusion of the material (or softening) and thermosets do not melt due to their highly crosslinked structure [1]. Welding techniques for polymers and related materials have been described in several documents and technical publications [2-5]. They are basically divided into three classes regarding the sort of heating generation source: conductive, electromagnetic, and frictional welding processes.

Hot tool is one of the most used welding techniques for polymers. In this process, two joining pieces are placed in contact with a heated tool, until a molten (softened) layer is created in their surface. At this point, the heated tool is retracted and joining pieces are pressed together under constant pressure until the molten layers consolidate and weld is formed [2, 3, 6]. The main applications of hot tool welding are in the automotive, construction, and pipeline industries.

This welding process was inspired in the traditional oxy-acetylene gas welding of metals, where the heating source consists of a heated gas [2, 3]. In this technique, two abutting pieces are placed in contact and a plastic rod is deposited on the joint line. The hot gas is used to soften the joint area and the rod filler, to achieve the melting temperature of the polymers. After softening is achieved, the joining parts are kept under pressure up to the consolidation of the joint [7, 8]. The most common hot gas-welded materials are

polypropylene (PP), polyethylene (PE), poly-vinyl-chloride (PVC), polycarbonate (PC), and polyamide (PA) [9]. Examples of applications are chemical storage tanks, repair of car bumpers, and other applications, where thickness of the joining partners is up to 50 mm [1, 9].

Extrusion welding was developed based on hot gas welding [5]. In this process, molten polymer, in the form of rod or pellets, is “extruded” on the joining line. A hot gas device preheats the joint line to improve bonding [1, 7]. Figure 1 presents the schematic principles of extrusion welding equipment. A wire reel supplies the filler material feeding an extruder, which in turn heats up and melts the filler material. The molten polymer is deposited on the joint line and pressed by a shoe-tool designed to provide the desired bead format. The filler material has normally the same composition of the base materials. Typical applications are joining of car bumpers, sailing dinghy hulls, and other car parts [1, 9].

In this process, melting heat is generated by the insertion of a metallic wire in the joint region. Electrical current is applied in the wire, and heat is generated through resistance. The insert remains entrapped inside the joint after the weld consolidation [9]. Currents are usually as high as 114 A [9]. Figure 2 shows the process scheme. Typical applications are joining of car bumpers, sailing dinghy hulls, and other car parts [1, 9].

The technique consists of installing a magnetic insert between the welding pieces and then placing that within an alternate current electromagnetic field (2–30 MHz) produced by a coil. Figure 3 presents the principle of the induction welding. This will cause the magnetic insert to heat up, through the influence of ferromagnetic electron-spin orientation, melting the surface of the welding pieces. Welding times are usually at 20s. Almost all thermoplastics can be welded by induction. Large parts (up to 6 m) can also be produced. Applications involve sealing of plastic-coated metal foil tops, automotive parts, and domestic appliances. In station wagon car parts, glass fiber-reinforced polypropylene seatbacks are examples of currently induction-welded automotive parts.

Developed to join polar polymers, radio frequency is a variant technique from implant welding. Instead of adding magnetic inserts in the joint area, the technique relies on the heating associated with the dielectric hysteretic losses of the polar thermoplastics. Under high frequency alternate electric field, polar polymers have their dipoles reoriented according to field polarity, liberating heat [9]. Hence, the increasing temperature will melt faying surfaces creating a bond, which will consolidate under pressure. Materials usually welded by this method are polyesters, polyamides, polyurethanes, and PVC [7]. as well as other materials with high dielectric loss. The main applications are almost exclusively for thin sheets and films. Medical blood and fluid bags, ring binders, and stationary wallets are examples of commercial application; applications in automotive are still limited [1, 10].

Microwave Welding. In this technique, a metal part or a conductive polymer is inserted between two welding pieces and placed under a microwave energy field (2.5 GHz), inside a microwave oven. As most of polymers are transparent to microwave radiation, the insert will heat up by internal heating associated with atomic/molecular vibration caused by microwave energy absorption.

After the creation of the molten layers, the welding pieces are pressed together and hold up to joint consolidation [10]. Microwave welding is a relative new technology and industrial applications are still limited. However, its potential applications are sought in automotive and domestic appliances [7]. Ultra high molecular weight polyethylene, ABS, and PC are examples of currently microwave-welded materials [11].

Laser and Infrared Welding. In this method, a laser beam is applied in the joint region to create heat and melt the joint area. Heating originates by molecular vibration, due to molecular resonance caused by the laser radiation. There are two types of laser welding, the absorptive and the transmitted. Absorptive laser welding is performed by CO₂-laser radiation. CO₂-laser radiation is transmitted through air, being manipulated by complex robotized mirrors. Because of the limited radiation penetration level into the joint, absorptive laser welding is limited to thin sections, such as plastic films [6, 10]. Transmitted laser welding is based on Nd:YAG lasers. Figure 4 presents a schematic picture of the transmitted laser welding. In this variant, one of the welding pieces must be transparent to the laser radiation, while the second welding piece absorbs the radiation, heating itself up and indirectly the adjacent piece [5].

This characteristic makes the transmitted technique able to weld thicker sections than the CO₂-laser absorptive technique. The main applications of laser welding are in food and medical packaging as well as electronic and microcomponents [5]. In the automotive industry, laser welding is used for joining instrument panel clusters, headlights, among others. Some of considerable works on laser welding of polymers can be found in [12-15]. In industrial products, infrared welding shares similar fields of application with laser welding, such as lightening in addition to its traditional application fields in the joining of fabrics and films.

Frictional Heating.

Vibration Welding. Heating in vibration welding arises from the friction between welding pieces. In this process, two pieces are placed in contact under pressure and set up in relative motion. The relative movement between pieces happens under controlled frequency and amplitude. After accomplishing melting of joint area, relative movement is stopped and pieces are kept under pressure until the joint consolidates [2, 3].

This welding method is more adequate to crystalline thermoplastics than for amorphous, although it is also believed that all compatible thermoplastics can be welded by vibration. Main applications involve automotive, aeronautical, and domestic appliance goods. The joining of air intake manifolds is a good example of vibration welding in automotive parts.

Ultrasonic Welding. In ultrasonic welding, frictional heating is generated by applying ultrasonic waves (usually from 20 to 40 kHz) on the welding pieces [16]. The pieces are kept together and pressure is exerted by a vibrating horn. Vibration creates surface and intermolecular friction, which in turn melt the polymer. After cooling under clamping force, the joint is formed [3].

Weldability is basically determined by base material stiffness. The greater the stiffness, the better the weldability will be, due to the

improved ultrasonic vibration transmission. Other factors influencing weldability are joint design, part geometry, energy requirements, amplitude, and clamping geometry. The fabrication of door fascia, bumpers, isolation pieces in the motor housing are current examples of parts welded by ultrasonic energy [17].

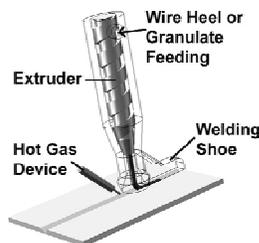


FIG. 1. Principles of the extrusion welding.

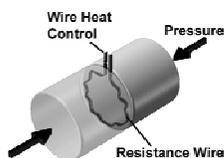


FIG. 2. Principles of the resistive implant welding.

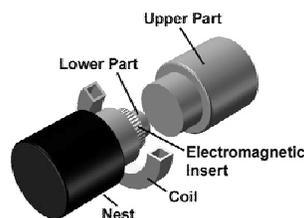


FIG. 3. Principles of the induction welding.

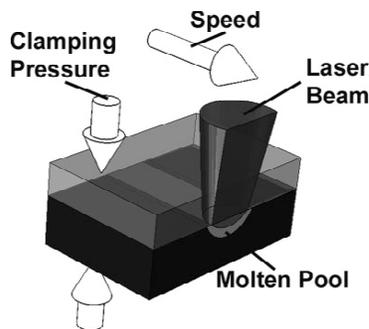


FIG. 4. Transmitted laser welding of polymers.

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Councilor's Corner

Tom McNamara

Past Councilor –
Upper Midwest Section



I hit my term limit as your Councilor effective the ANTEC Council 1 meeting last Spring. It has been my pleasure representing our Section over the last six years and I hope you felt that I was a satisfactory liaison between SPE International and the Upper Midwest Section. Our Section need not be concerned as our Board has elected an extremely capable replacement in Paul Rothweiler. I have been a Co-Chair of the Education Committee with Paul and found him to be very professional, motivated, and diligent in his efforts to improve our Section. Paul is a past President of our Section and understands the needs of the Society and will be an excellent representative of our Section.

As my final pitch as Past Councilor, I would like to remind you that SPE is struggling in retaining old and attracting new members for many reasons beyond our control, such as, companies not funding memberships, young engineers reliance on internet, and an assortment of other reasons. However, our Society has reacted appropriately and has turned the tide with us seeing moderate membership growth over the last two years. Please help us in recruiting your colleagues.

And last, please support Paul as our new Councilor. If you have any concerns or recommendations for improvement for our Section or SPE International, contact Paul with your thoughts.

Thanks for allowing me to serve you over the last six years.

Paul Rothweiler -

Councilor - Upper Midwest Section



I want to start this column by thanking my predecessor Tom McNamara. Tom has done an excellent job in serving us over the last six years and deserves all the kudos we can bestow upon him. It is daunting for me to try and fill this position after Tom, but the good news is he has agreed to work closely with me to ensure you will continue to be well-represented.

September 15th was my second Councilor's meeting representing you and I have been impressed by a number of things. I will share two to keep this column brief. The first is the qual-

ity and commitment of professionals that make SPE 'the' leading professional organization. This commitment is exemplified by many members of SPE, but during the Councilor's meeting on September 15th (a Saturday) it was really exemplified. One of the speakers mentioned it was his 50th birthday. Most of us covet our Saturdays and birthdays, but here was someone willing to represent SPE on his 50th birthday. With that level of commitment it is no wonder SPE is 'the' leading professional organization.

The other point is the high-standards the executive level has placed upon itself in serving SPE members. At the September meeting the executive management acknowledge a number of issues and shared their efforts to pro-actively resolve them. These include errors (you may have personally experienced) with membership and renewals. It was acknowledged there have been issues in producing good reports from the membership database and the resolution has already begun by transitioning the membership data to a different program along with identify ways to make joining and renewing easier. SPE is working to ensure SPE remains relevant with the proliferation of plastic information across the internet, by connecting plastics professionals with each other and to quality information. One tool currently being evaluated in a pilot by select Divisions, is called MemberFuse. MemberFuse is anticipated to be central repository of information and link SPE members with common interests together. MemberFuse is one of many examples where plastic professionals have made personal contributions in the form of time and money to make SPE better. Another significant effort (being led by our Section's) Dick Bopp is the "Best Practices" program. This program will help Section's and Divisions to deliver the best services to SPE members in the form of seminars, MiniTech's, professional meetings, recognition programs, scholarships and many other services.

I want to close with a comment made by SPE's President. "The membership, are the ones that shape the organization. We have the authority and responsibility to keep SPE a thriving organization that represents and serves the plastic professional." I can attest that the executive committees at the national and local level are aligned with this vision. If you are not currently active in shaping SPE, I encourage you to attend the next Upper Midwest Section's board meeting. The Board members will be happy to explore with you, how you can shape the future of plastics.

As always...I invite you to contact me anytime, or contact the Upper Midwest Section's Board regarding items I can assist you with. I look forward to hearing from you, and together, continuing to make this Section and SPE the best professional organization for plastic professionals.

AWARDS COMMITTEE REPORT *by LuVerne Erickson*

January 25, 2012

Co-Chair Awards Committee

Thomas M. McNamara

Nominated by the Upper Midwest Section. Tom's longtime service and commitment to SPE made him a clear choice for Honored Service Member. He is extensively active in three of the Student Chapters supported by the Upper Midwest Section, organizing seminars that raised in excess of \$50K in support of numerous scholarships for student at those schools. He has been President of the Section, served for 11 years as Technical Program Chair, moderated ANTEC Student Sessions for 8 years, and more recently is serving his second term as a Councilor for Upper Midwest. On the Society level, Tom has put in considerable time on the Sections Committee, Nominations Committee, Awards Committees, and the Student Activities Committee.



January 27, 2012 – Upper Midwest Section celebrated our Third Annual Awards Event Gala. Conversation, dining, and awards took place at The Old Spaghetti Factory in downtown Minneapolis. Awards were given to board members for their service to the Upper Midwest Section. C. K. 'Tony' Norris was honored as the first person to receive the Upper Midwest Section "Distinguished Member Hall of Fame" award. He was accompanied by his three daughters. Entertainment for the evening was provided at the Guthrie Theater where the group attended Tennessee Williams' "Cat on a Hot Tin Roof".

March 31, 2012 - Society of Plastics Engineers (National) selected our Section President, Dr. Richard Bopp, to join the Plastics Pioneers Association at the SPE ANTEC in Orlando, FL on March 31. Dr. Bopp was also named a Fellow of the Society of Plastics Engineers in 2011. He holds over 20 patents and has published approximately 30 technical articles. He is currently Plastics Environmental Division (D35) councilor as well. Dr. Bopp is very deserving of all of these honors.

March 31, 2012 – Upper Midwest Section was a 2012 Gold Recipient of the Pinnacle Award. The Pinnacle program was established in 2005 to recognize Sections and Divisions that successfully create and deliver member value during year. Sections and Divisions are reviewed in four categories of achievement: organization, technical programming, membership and communication. Two levels of achievement are possible: Silver and Gold.

April 24, 2012 – David Haakana of Lonsdale was awarded the 2012 Tony Norris Award. This award was presented at the Upper Midwest Section of SPE at the MiniTech held May 15, 2012. This award was presented by the local Scholarship Office. To all members – It's not too early to think about nominating a present or past member of the Upper Midwest Section to be considered as a for Upper Midwest Section "Distinguished Member Hall of Fame" award. Your nominations can be forwarded to any board member at any time. The following are the minimum requirements for this award. This is a process that takes time to complete so forward your nominations early.

Requirements of a candidate for Upper Midwest SPE Distinguished Member Hall of Fame Award

Active Member of SPE for 10 years (minimum) and Upper Midwest section for 6 years (min.)

Officer/Councilor of SPE Upper Midwest Section for one term (minimum)

Active in education of SPE members or student members.

Active in other Divisions or transfer from another Section of SPE.

Shall have been a Senior Member in good standing for six consecutive years.

Promoter of the field of plastics within the SPE Upper Midwest Section.

Have demonstrated long-term, outstanding service to, and support of, the Society and its objectives which may include any of the following: A significant scientific/engineering/equipment invention or breakthrough or Development of an outstanding product / market / end-use niche, or business endeavor or Long and valuable service to a segment / constituency / discipline / association / etc. of the plastics industry or A record of constructive, collaborative action with government / regulatory / academic / environmental / health / trade / or other industry-related groups Shall be sponsored, in writing, by at least one current Board member of the SPE Upper Midwest Section



SOCIETY OF PLASTICS ENGINEERS MEMBERSHIP APPLICATION

13 Church Hill Road, Newtown, CT. 06470 USA
Tel: +1 203-775-0471 Fax: +1 203-775-8490
membership@4spe.org www.4spe.org

European Member Bureau
Tel: +44 7500 829007
speurope@4spe.org www.speurope.org

Applicant Information: (please print)

My Primary Address is home _____ or business _____ (check one)

Name _____
First MI Last

Phone Number _____ Home ___ Work ___ Cell ___

Organization Name _____

Job Title _____

Address _____

Email(Required Field) _____

Address _____

Alternate Email _____

Address _____

City _____ State _____

Date of Birth _____ Graduation Date* _____

Zip/Postal Code _____ Country _____

Gender: Male ___ Female ___ *Required for Student Membership

Membership Types (please check one)

___ **Student \$31** ___ **Young Professional \$99** ___ **Professional \$144**(includes \$15 new member initiation fee)
Choose up to 2 Member Groups on the back of this application.

___ **Professional +2 Additional Member Groups \$164** Choose up to 4 Additional Member Groups on the back of this application.

___ **Professional +4 Additional Member Groups \$184** Choose up to 6 Additional Member Groups on the back of this application.

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Amount _____ Check Number _____ Cash _____

Credit Card Information (Check One) American Express ___ Visa ___ MasterCard ___

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Name On Credit Card _____ Amount _____

By signing below I agree to be governed by the Bylaws of the Society and to promote the objectives of the Society. I certify that the statements made in the application are correct and I authorize SPE and its affiliates to use my phone, fax, address and email to contact me.

Signature _____ Date _____

Recommended by _____ ID# _____

The SPE Online Membership Directory is included with membership. Your information will be automatically included.

- ___ Exclude my email from the Online Membership Directory.
- ___ Exclude all my information from the Online Membership Directory.
- ___ Exclude my address from 3rd party mailings.

Dues include a 1year subscription to *Plastics Engineering* magazine-\$38.00 value (non-deductible). SPE membership is valid for twelve months from the date your membership is processed.

**OPEN Invitation to all
Upper Midwest Section
Schools/Colleges
to JOIN the Society of Plastics
Engineers (SPE)**

Top 10 reasons to join the SPE

Student Members of SPE have all the privileges of SPE membership afforded to other member grades, including:

- Reduced SPE membership dues – ONLY \$31.00 per year
- *Plastics Engineering* magazine every month
- Reduced registration for all educational seminars; Reduced registration at ANTEC and other technical conferences
- Discounts on over 100 important publications
- Insurance programs
- 3 free “position wanted” ads in *Plastics Engineering*; Access to *Career Solutions*, SPE’s Online Plastics Employment Network
- Scholarships offered through the SPE Foundation, SPE Sections and Divisions; Cash Awards for Best Paper/Poster at many SPE-sponsored Conferences.
- FREE membership to your local SPE Section; FREE Division affiliation
- Section dinner meetings; technical programs and even Special Events.
- Professional contacts

... and much more!!!

**Upper Midwest Section
(S22) Membership**

October 17, 2011

Section Total 341

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CALENDAR OF EVENTS

2012 MegaTech.....November 13, 2012

Awards Event.....January 19, 2013

Mark Your Calendars - Upcoming Events

Our section is set to hold its Fourth Annual Awards Event on January 19, 2013 at the Old Log Theater. All members and their guests are invited. The event starts at 5:30 PM with a social hours during the first part and presentation of awards afterwards. This is followed by dinner and the play "A Perfect Wedding". Recent history had us at The Chanhassan Dinner Theatre which is the largest dinner theater in the US. Last year's event was at the Guthrie Theatre which is the largest regional playhouse in the country and newest in the Twin Cities. This year we will be entertained at the Old Log Theatre which is the oldest continuously running theatre in the Twin Cities area. More information and registration will be found at our section's website www.uppermidwestspe.org. For questions, contact LuVerne Erickson at 763-971-6143 or verne.erickson@clariant.com.



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