# TPM&F

THERMOPLASTIC MATERIALS AND FOAMS DIVISION

HTTP://SPETPMF.COM/

Communications Excellence Award

Pinnacle Award

## TPM&F SCOPE

*The Thermoplastic Materials and Foams Division is organized to provide a focal point for the interchange of information relating to non-vinyl thermoplastic resins including fluoropolymers, polyamides, polyesters, polyolefins, polystyrenes, polyurethanes, their filled and/or reinforced products, and their foamable and foamed products. Its interests lie in stimulating the development of scientific and engineering knowledge. By encouraging participation between producers and consumers, it aims to provide information on new developments which shall encompass synthesis, characterization, fabrication, safe handling, application, serviceability, and marketing.*

The Society of Plastics Engineers
6 Berkshire Blvd, Suite 306
Bethel, CT 06801
United States

## CHAIRMAN'S MESSAGE

**APRIL 2018**

Dear fellow SPE TPM&F Division members,

Due to our strong programs on technical aspects, education, membership, and community outreach, the SPE TPM&F Division once again received the highest recognition from SPE HQ: 2018 SPE Gold Pinnacle Award! We also won the Communications Excellence Award as Notable Achiever! Thanks to Theresa, Donna, Aaron, Kim and others who contributed to the application packages and make the reputation of TPM&F as one of the strongest divisions in SPE!

Congratulations to our 2018 Outstanding Achievement Award (OAA) recipient: Dr. Jim Throne, a very well-known expert on advanced plastics processing technologies, including thermoforming, foam processing and rotational molding. Dr. Throne has been invited for a keynote speech in our FOAMS® 2018 Conference or other TopCon by TPM&F.

Congratulations to our BOD Director Professor Masahiro Ohshima, who was recently appointed Dean of the Engineering School and the Graduate School of Engineering at Kyoto University. He won the Best Paper Award for FOAMS® conference for multiple times and was our 2015 OAA recipient.

TPM&F Division is proud to announce that three of our members are celebrating over fifty years as SPE members: Salvatore J. Monte, Jack St. Pierre and Hormoz Hormozi.

We are proud to recognize their contributions to the plastics engineering field. In this newsletter Sal and Jack shared their advice and reflections from their over half century of successful career in plastics area. In addition, Sal is being honored as the scholarship namesake because he is the longest serving member of our SPE Division. Also, I would like

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## CHAIRMAN'S MESSAGE - CONTINUED

to congratulate our 2018 Ananda Chatterjee Travel Award Winners: Nahal Aliheidari *(Washington State University)* and Chongda Wang *(University of Toronto).*

Let's turn to the strong technical programs of TPM&F. Thanks to the hard work by Donna Davis and Prof. Chul Park, we had another successful Polyolefins Conference (Feb 25-28, 2018) with over 700 attendees. Our foams sessions were once again well received!

I cordially invite you to participate in our SPE FOAMS® 2018 Conference, Tutorial, and Exhibition. It is the premier forum for presentations of new developments in foaming technologies, and will be held September 11-14, 2018 at the Hyatt Regency in Montreal, QC, Canada.

Finally, the exciting ANTEC® / NPE in Orlando is approaching. Please mark your calendar for our **TPM&F business meeting / reception in the Room 320F of OCCC at 6 PM, Wednesday May 9, 2018.** I look forward to seeing many of you there. For detailed TPM&F sessions in ANTEC® 2018, please refer to pages 5 and 6 in this newsletter .

*Dr. Xiaoxi Wang*
*SPE TPM&F Division Chair*

## WE FONDLY REMEMBER ....


GAUTAM SHAH

TPM&F Division lost a former Board member, Mr. Gautam Shah, on December 19, 2017. Gautam served on the TPM&F Board from 1992 to 1998. He served as a Best Paper Chair for the Division. He carried out his assignment with passion and made sure only the best technical paper and original entry receives the award. He thoroughly reviewed each paper submitted for the conference and then reviewed again the selected five papers during the podium presentation with his team. He also made every effort to present the award check and framed certificates in person at the recipients' work or institution. This method gave a true recognition to the awardee in front of his/her peers and supervisor. He had also served as a session moderator at the Annual Technical Conference of SPE.

Gautam received a B.S. degree in Chemical Engineering from Michigan Technological University and an MBA from Indiana State University. He was a Registered Professional Engineer in the State of South Carolina.

He worked at Cryovac Division Sealed Air from 1982 to 2008, when he retired. Prior to joining Cryovac, he had also worked at Hercules, Inc.

Gautam was the inventor of many of the packaging films developed at Cryovac/Sealed Air. He developed and commercialized BDF2001 in 1986 followed by BDF2050 in 1990. He was inducted into Sealed Air's Hall of Fame in 2007 for having 22 patents granted to him.

Gautam had a passion for life, especially enjoying Indian classical music, researching and discussing politics and philosophy, watching and playing tennis, eating good food, and most importantly, keeping in close contact with old and new friends. Gautam will be truly missed by all of us.

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HSM: Honored Service Member FE: Fellow of the Society HLM: Honorary Lifetime Member

## UPCOMING DIVISION MEETING AT ANTEC® 2018

**Our next business meeting will take place on :**

**WEDNESDAY MAY 9, 2018.**
**at 6:00 PM**

**Orange County Convention Center**
**Room 320F**

## NEWSLETTER PUBLICATION SPONSORSHIP INFORMATION

Sponsorship size allocations
**(1 year, 4 issues):**

**BC size:** **$400**
3.500" wide x 2" high

**1/4 page size:** **$700**
3.875" wide x 5" high

**1/2 page size:** **$1,200**
7.750" wide x 5" high

**If you are interested in sponsoring our newsletter, please contact:**
**Aaron Guan**
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16th International Conference on Advances in Foam Materials & Technology

# CONFERENCE, TUTORIAL & EXHIBITION

## SEPTEMBER 11-14 – MONTREAL, CANADA

Co-sponsored by the Society of Plastics Engineers' Thermoplastic Materials & Foams Division and Local Québec Section

### Papers are invited on the following topics:

Advances in Foam Materials
Advances in Foam Processing
Advances in Foam Applications
Micro/Nanocellular Foams & Future Trends
Mechanical Properties & Cell Structures
Observations, Analysis & Modelling
Sustainable & Biofoams
Crosslinked Foams

**Please send a title and an abstract of your paper, 100-150 words in length, with full contact information to**

**Dr. Stéphane Costeux, sccosteux@dow.com**

### Key dates:

| | |
|---|---|
| May 1, 2018 | Abstract due |
| May 15, 2018 | Notification of acceptance to all authors |
| June 15, 2018 | First version of the paper submitted |
| July 15, 2018 | Final revised version of the paper due |

### Conference Chair

| | |
|---|---|
| General Conference: | Marie-France Sosa, Plastiques GPR<br>Xiaoxi Wang, The Boeing Company |
| Technical Program: | Stéphane Costeux, Dow-Dupont |
| Foams Tutorials: | Chul Park, University of Toronto |

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FOAMS®

HYATT REGENCY

1255 Jeanne-Mance
Montreal, QC H5B 1E5, CANADA

## OUR DIVISION REPRESENTATION AT ANTEC®2018

The SPE Thermoplastics, Materials and Foams Division will host 3 sessions at ANTEC® 2018.

### WEDNESDAY • MAY 9, 2018

SESSION 1: FRONTIERS

MORNING

| | | |
|---|---|---|
| 8:00 AM | TRANSPARENT FOAMS IN POLYETHERIMID | *Vipin Kumar* |
| 9:00 | AUXETIC FOAM SENSOR WITH SILIVER NANOWIRE | *Md Faisal Ahmed* |
| 9:30 | POLY(VINYLIDENE FLUORIDE)/ GRAPHENE NANOPLATELETS COMPOSITES WITH MICROCELLULAR STRUCTURE TO ENHANCE ELECTROMAGNETIC SHIELDING PROPERTIES | *Biao Zhao* |
| 10:00 | ENHANCING ELECTROMAGNETIC SHIELDING PERFORMANCE OF PVDF MWCNT COMPOSITES THROUGH FOAMING | *Chenyinxia Zuo* |
| 10:30 | PIEZOELECTRIC FOAMS WITH HIGH THERMAL STABLILTY AND FLEXIBILITY | *Zhe Liu* |
| 11:00 | RESORCINOL FORMALDEHYDE AEROGEL NANO-NETWORK STRUCTURAL ASSEMBLY AND ITS THERMAL PROPERTIES CORRELATION | *Mohammed Alshrah* |

### THURSDAY • MAY 10, 2018

SESSION 2: FUNDAMENTALS

MORNING

| | | |
|---|---|---|
| 8:00 AM | EFFECT OF FOAM DENSITY ON ELASTOMERIC NANOCOMPOSITE FOAMS BASED ON POLYISOPRENE RUBBER | *Ali Vahidifar* |
| 8:30 | EFFECT OF SOFT SEGMENTS & NUCLEATION AGENTS ON THE PROPERTIES OF THERMOPLASTIC POLYURETHANE FOAMS | *Tzu-Jian Tseng* |
| 9:00 | THEORETICAL AND EXPERIMENTAL INVESTIGATION OF BUBBLE GROWTH IN HIGH-PRESSURE FOAM INJECTION MOLDING | *Chongda Wang* |
| 9:30 | STRAIN HARDENING OF LINEAR POLYMER ENHANCED BY HEAT SHRINKING FIBERS | *Eric S. Kim* |
| 10:00 | IN-SITU VISUALIZATION OF CRYSTAL NUCLEATION & GROWTH BEHAVIORS OF PLA UNDER HIGH PRESSURE $CO_2$ | *Sandra Romero Diez* |
| 10:30 | IN-SITU PP/PET NANO-FIBRILLATED COMPOSITES: THE EFFECT OF VISCOSITY RATIO ON FIBRILLATION AND FOAMING BEHAVIOR | *Chongxia Zhao* |
| 11:00 | MODELING OF CELL GROWTH EFFECTS ON THE PERCOLATION THRESHOLD OF FIBERS IN CONDUCTIVE POLYMER COMPOSITE FOAMS | *Sai Wang* |

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SESSION 3: PROCESSES & APPLICATIONS

AFTERNOON

1:30 PM INFLUENCE OF THE COMPOUNDING PROCESS PARAMETERS ON THE DISPERSION & MATERIAL PROPERTIES OF GRAPHENE BASED PP COMPOSITES WITH TSE
*Christian Hopmann*

2:00 OPEN-CELL FOAMING OF PP PTFE FIBRILLATED COMPOSITES
*Yunhui Qiao*

2:30 AN APPLICATION OF THERMOPLASTIC POLYURETHANE FOAMING IN HANDRAIL EXTRUSION
*Qingping Guo*

3:00 THE EFFECT OF PP/PET NANO-COMPOSITES ON FOAMING & FLEXURAL BEHAVIORS
*Lun Howe Mark*

3:30 PROTECTED BIOFILM GROWTH IN MACROPOROUS POLYVINYILIDENE FLUORIDE CARRIERS FOR BIOLOGICAL ORGANIC REMOVAL FROM MUNICIPAL WASTEWATER
*Pardis Ghahramani*

4:00 IMPACT MANAGEMENT & PROTECTION FOR PLAYING SURFACES USING EXPANDED POLYOLEFIN PARTICLE FOAM
*Steven R. Sopher*

4:30 ULTRA-LOW DENSITY FOAMS OF NANOCRYSTALLINE CELLULOSE REINFORCED WITH POLYVINYL ALCOHOL
*Peipei Wang*

5:00 A SYSTEM FOR VISUALIZING & MEASURING STRESS OF PLASTIC FLOWS UNDER SHEAR CONDITIONS
*Taylor D. Ducharme*

5:30 MINING THE VALUE FROM OIL SAND TAILINGS PONDS
*Pavani Cherukupally*

6:00 HIGHLY VISCOUS POLYAMIDES MADE OF CAST POLYAMIDE 6 RECYCLATES
*Benjamino R. Formisano*

# Semi-Centennial Membership Honorees

TPM&F Division is proud to announce that three of our members are celebrating over fifty years as SPE members: Salvatore J. Monte, Jack St. Pierre and Hormoz Hormozi. We are proud to recognize their contributions to the plastics engineering field.

## Salvatore J. Monte

President of Kenrich Petrochemicals, Inc.; B.C.E. Manhattan College; M.S.-Polymeric Materials, NYU Tandon School of Engineering; SPE Fellow; Licensed P.E.; PIA Recycle Subcommittee-Compatibilizers; BOG PPA-Newsletter Chair; 31-U.S. Patents; Lectured Worldwide on Titanates & Zirconates; 450-ACS CAS Abstracts of "Works by S.J. Monte"; Classified Top Secret-DoD Insensitive Munitions Program; Lifetime member National Defense Industrial Association; Lifetime Member BOD-SPE TPM&F Division-Past Chairman and Counselor: past-Chairman of the NYRG-ACS Rubber Division; past-President of the SPE P-NJ Section; Testified on Trade and IP Protection; Bayonne CC Business Man of the Year 2015; FSCT C. Homer Flynn Award for Technical Excellence; Albert Nelson Marquis Lifetime Achievement Award; Rotary Paul Harris Fellow; UA Million Miler

**Some advice for SPE student members and young professionals**

*"Man plans and God laughs. You are part of God's cosmic plan and the best you can do is do your best – all the time. Few men are remembered past the century in which they lived. When I was just 2-years old – on Oct. 29, 1941, Winston Churchill visited Harrow School, his alma mater, and made some remarks. Included were these beginning words: "Never give in, never give in, never, never, never, never-in nothing, great or small, large or petty - never give in except to convictions of honour and good sense."*

When you are truly doing inventive work – remember leading edge is bleeding edge and much must be sacrificed for your work to succeed – and pray for the gift of persistence. Churchill said this in many ways:

- "Never give up on something that you can't go a day without thinking about."
- "If you're going through hell, keep going."
- "Success is the ability to go from failure to failure without losing your enthusiasm"
- "The farther back you can look, the farther forward you are likely to see."
- "Never, never, never give up."
- "Plans are of little importance, but planning is essential."
- "What is the use of living, if it be not to strive for noble causes and to make this muddled world a better place for those who will live in it after we are gone?"
- "All the great things are simple, and many can be expressed in a single word: freedom, justice, honor, duty, mercy, hope."
- "You create your own universe as you go along."
- "Don't argue about the difficulties. The difficulties will argue for themselves."
- "Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing had happened."
- "The price of greatness is responsibility over each of your thoughts."

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One source of great advice I found was in a poem entitled "Desiderata" written in 1927 by Max Ehrmann, a poet and lawyer from Terre Haute, Indiana. The word desiderata means "things that are desired." Ehrmann said he wrote it for himself, "because it counsels those virtues I felt most in need of."

**DESIDERATA**

Go placidly amid the noise and the haste, and remember what peace there may be in silence. As far as possible, without surrender, be on good terms with all persons.
Speak your truth quietly and clearly; and listen to others, even to the dull and the ignorant; they too have their story.

Avoid loud and aggressive persons; they are vexatious to the spirit. If you compare yourself with others, you may become vain or bitter, for always there will be greater and lesser persons than yourself.

Enjoy your achievements as well as your plans. Keep interested in your own career, however humble; it is a real possession in the changing fortunes of time.

Exercise caution in your business affairs, for the world is full of trickery. But let this not blind you to what virtue there is; many persons strive for high ideals, and everywhere life is full of heroism.
Be yourself. Especially, do not feign affection. Neither be cynical about love; for in the face of all aridity and disenchantment it is as perennial as the grass.

Take kindly the counsel of the years, gracefully surrendering the things of youth.
Nurture strength of spirit to shield you in sudden misfortune. But do not distress yourself with dark imaginings. Many fears are born of fatigue and loneliness.

Beyond a wholesome discipline, be gentle with yourself. You are a child of the universe no less than the trees and the stars; you have a right to be here.

And whether or not it is clear to you, no doubt the universe is unfolding as it should. Therefore be at peace with God, whatever you conceive Him to be. And whatever your labors and aspirations, in the noisy confusion of life, keep peace in your soul. With all its sham, drudgery and broken dreams, it is still a beautiful world. Be cheerful. Strive to be happy.

**REFLECTIONS**

Always do your best because you never know where your destiny will take you.
When I was a Senior in High School (1957), the Space Age began with the Soviet launching of Sputnik and I decided to get involved in science and engineering. I thought I would be an electrical engineer – but some of my brilliant freshman colleagues were building portable radios inside of Johnson & Johnson metal band aid boxes so they could listen to the Baseball World Series when in class. Outclassed, I decided to take Civil Engineering because I couldn't see electrons – but I could see bridges. Besides, my mother's side of the family were brick layers and my father's side cement masons. I majored in structures where you learned about compression strength and modulus of materials such as steel and cement. Fresh out of college, I went to work for Turner Construction Co. and worked on a 23-story addition to the NY LIFE Insurance building on East 27th St, between Madison and Park Avenues in Manhattan.

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Upon graduation from college in 1961, I married my high school sweetheart Erika Gertraud Spiegelhalder – the daughter of German immigrants. Erika turned out to be the bosses' daughter. While working towards my P.E. license in 1965, Erika's father and uncle bought back and went private with their company that had gone public in 1961 and made Erika a Director and me a VP of Kenrich Petrochemicals, Inc. I had worked for Holloway Sucro Chemical in Maspeth, Long Island City where Kenrich was a pilot plant operation at the back end of the plant, in the summer of 1957 between HS and College. I worked hard and did my best – not knowing I was mapping out my future in plastics. I joined Kenrich on April 1, 1966 and true to the German apprenticeship tradition, I ran was made to work in the plant doing formalite condensation polymerization reactions and distillations to make aromatic plasticizer oligomers – loading trucks, and making paste and powder masterbatches of metal oxides, sulfur and sulfide cure accelerators for the Rubber Industry on sigma blade and planetary mixers, two and three-roll mills and Henschels.

It was clear that I needed to become more proficient in the chemistry of polymers and went back to school in 1967 at Brooklyn Polytechnic to get a chemical engineering equivalence to qualify for the M.S. Program in Polymeric Materials (1969) under the mentorship of Dr. Paul Bruins. I had joined the ACS and ACS Rubber Division shortly after coming to Kenrich and joined the SPE in 1968. There were less than 100-people at the time with a Master's degree in Polymeric Materials and the 1967 academy award winning film named "The Graduate" made Plastic a hot career like computer programming is today. In the movie, Dustin Hoffman is career counseled by his father's business partner: "I want to say one word to you. Just one word. … Plastics … There's a great future in plastics. Think about it. Will you think about it?"

So, in 1973, while trying to disperse 85% ZnO in a naphthenic oil to make a masterbatch for curing Neoprene® rubber – I could not reach the desired degree of dispersion with available wetting agents and theorized that maybe an isostearic acid tied to Titanium (patented Ken-React® KR® TTS – isopropyl triisostearoyl titanates) would make it more efficient – like a light turned to laser – never dreaming that it would become the world standard for ZnO ester based cosmetic sunblocks. I'm thinking about 1.5-nanometer atomic monolayers on the ZnO interface, which is the length your fingernail growth in a second – and I find myself in a materials world that works at a level that can't be seen even with SEM. It's 1974 and Dr. Paul Bruins – now a colleague – has a M.S. student who is doing his thesis on mineral filled polyolefins because it's the time of the Arab oil crisis and everyone is trying to stretch out polymers with fillers. I suggest the new titanate, which works well and then write an article with Paul for Modern Plastics magazine that "goes viral" and the rest is history.

How do you plan in your career at age 18 to solve the problem of unplanned detonation of propellant used in tank rounds for the Abrams A-1A tank gun? Turns out that my work in injection molding CAB screwdriver handles; enhancing the foamability of nitramine blowing agents such as AZO; enhancing the flame retardant performance of ATH filled PP; improving the dispersion of aluminum powder in coatings would lead to patents in LOVA (Low Vulnerability Ammunition) and Solid Rocket Fuel for the Insensitive Munitions Program and Space Shuttle.

So, 2018 – 50-years after joining SPE – finds me working on a new (Titanocene/Z-N – like) catalyst for PCR and PIR recycled plastics; trying to make an endothermic foaming agent mimic exothermic behavior; working on non-silane reactive substrates such as carbon, carbonates, sulfates, aramids, cellulosics and smart materials; and with a thermoplastic called Portland cement that consists of 74% methyl sulfides, metal oxides, calcium that uses silica as a filler and water as a reactive plasticizer. I filed my 32nd patent (pending) recently because I can reduce the water to Portland cement ratio by 31% to equivalent rheology using interfacial organometallic chemistry. I believe I can stop efflorescence in concrete – a 1.1 $Billion per annum infrastructure problem. I think

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I am back in Civil Engineering.  Or maybe it's just part of my Mission Statement to Make More Efficient Use of Raw Materials Through Titanium.

Making things more efficient for a better world is what materials or social engineers do: "What is the use of living, if it be not to strive for noble causes and to make this muddled world a better place for those who will live in it after we are gone?"

# Jack St. Pierre

Jack St. Pierre started his plastics career in 1963 for three summers with Colt's Plastics in Connecticut (injection and compression molding) as a college student initially at Lowell Tech and then at Gannon College. Jack began full time career in 1966 with Niagara Plastics (injection molding) in Erie, PA which led to his return to New England as a manufacturer's rep for Niagara. He was named Plant Manager for Liqui-Box Corp. in Auburn MA. (blow molding) in 1970 and later ran Houston, TX and Baltimore, MD plants. He joined Bercon Packaging (Shell Chemical, blow molding) in 1975 as Training Director and later, manufacturing and sales assignments. In 1983, he joined legendary injection blow molding guru, Jack Farrell in starting-up a New Jersey injection blow molding plant for Wedco (later Tri-Delta). He began formulating a plan to start his own Injection-stretch blow molding company. Pocono P.E.T. Inc. which launched in 1986 and grew from 14 to 85 employees manufacturing zero defect PET jars and bottles for the food industry. He sold to Pretium Packaging in 1998. After retiring for a short time, Jack built and operated an Assisted Living facility in PA with partners and spent eight years running a small business incubator for the local Economic Development company. Jack earned an MBA certification from the Freeman School of Business at Tulane at age 63!  He became CEO of a fledgling start-up high tech modified polyurethane foams company in 2010.

**Some advice for SPE student members and young professionals**

> *"My advice to student members and young professionals is to stick with the industry, learn as much as possible about all plastics disciplines and to follow your dreams especially if they lead to an entrepreneurial path and an eventual start-up. The difficult road to success is well worth it."*

**REFLECTIONS**

In retrospect, I could have not chosen a better industry to be a part of, witnessing the numerous, awesome technological advances over 50 years and meeting and working with countless professionals in several plastics processes. I'm humbled and honored to have been a part of the early growth of PET as a food packaging material.

# TREASURER'S REPORT
*February 27, 2018*

**Financial Summary:**

FY17-18 revised budget: Income $29,875; Expenses $40,475. Thus, we have a budgeted deficit of $10,600.

First half of FY actual transactions are: Income $9,661.55; Expenses $7,735.06.

The following historical budget categories did not spend any money in the first half of the fiscal year: Communication, Student Travel Award, and Outstanding Achievement Award.

**Investment Account Update:**

Between June 30 and December 31, the account gained 6.5%, rising $10,199.05 from $159,987.09 to $168,037.24. We were charged the traditional 0.21% quarterly fees (a total of $681.90).
Full reports of holdings and performance for the first two quarters of FY17/18 are available upon request:

As of Feb 26, the investment account value has risen further to $169,324.08.

**TPM&F Financials:**

| | FY2016-17 | | FY2017-18 | |
|---|---|---|---|---|
| | 6/30/17 Actual | Revised Budget | 12/31/17 Actual | Revised Budget |
| INFLOWS | | | | |
| Interest & Dividends | $ - | $ - | $ - | $ - |
| Wells Investment Program Net Gain | $ 14,859.99 | $ 1,000.00 | $ 10,199.05 | $ 4,000.00 |
| Conference - FOAMS | $ 7,594.45 | $ 6,000.00 | $ (2,900.00) | $ 6,000.00 |
| Conference - Polyolefins | $ 16,388.23 | $ 10,000.00 | $ - | $ 13,000.00 |
| Previous Year TopCon Reimburse | $ - | $ - | $ - | $ - |
| SPE Rebate | $ 4,070.00 | $ 3,200.00 | $ 1,487.50 | $ 6,000.00 |
| Sponsorship | $ 750.00 | $ 1,000.00 | $ 875.00 | $ 875.00 |
| Total Inflows | $ 43,662.67 | $ 21,200.00 | $ 9,661.55 | $ 29,875.00 |
| OUTFLOWS | | | | |
| ANTEC Expenses | $ 1,086.07 | $ 4,000.00 | $ 1,000.00 | $ 4,000.00 |
| Best paper awards | $ 500.00 | $ 1,140.00 | $ 500.00 | $ 1,100.00 |
| Non-ANTEC Board Meeting | $ 545.78 | $ 3,500.00 | $ 1,305.77 | $ 5,300.00 |
| Councilor Travel | $ 1,785.57 | $ 3,000.00 | $ 1,043.44 | $ 2,000.00 |
| Educational Programs | $ 4,398.39 | $ 5,500.00 | $ 1,750.00 | $ 4,150.00 |
| General Office | $ 14.35 | $ 50.00 | $ 10.85 | $ 50.00 |
| Communication | $ 2,856.00 | $ 3,675.00 | $ - | $ 2,175.00 |
| Outstanding Achievement Award | $ - | $ 3,000.00 | $ - | $ 4,000.00 |
| Scholarships/Grants | $ 8,500.00 | $ 8,500.00 | $ 1,000.00 | $ 5,000.00 |
| Student Membership Subsidy | $ - | $ - | $ - | $ 6,000.00 |
| Student Travel Award | $ 3,000.00 | $ 2,000.00 | $ - | $ 3,000.00 |
| Other expenses | $ 1,567.87 | $ 2,400.00 | $ 1,125.00 | $ 1,700.00 |
| University Travel Award | $ - | $ - | $ - | $ 2,000.00 |
| Total Outflows | $ 24,254.03 | $ 36,765.00 | $ 7,735.06 | $ 40,475.00 |
| Overall Surplus (deficit) | $ 19,408.64 | $ (15,565.00) | $ 1,926.49 | $ (10,600.00) |
| Budget Plan | $ (15,565.00) | $ (15,565.00) | $ (10,600.00) | $ (10,600.00) |
| Variance from Budget | $ 34,973.64 | | $ 12,526.49 | |
| Ending Account Balance | $ 225,194.01 | | $ 227,120.50 | |

Respectfully submitted by:
Maxwell J. Wingert
mw4spe@yahoo.com

## EDUCATION COMMITTEE REPORT

**Salvatore J. Monte Scholarship**

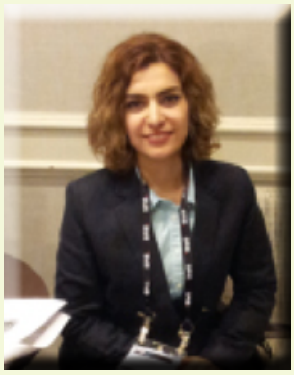
The 2018 and 2019 SPE scholarships sponsored by TPM&F have been named the "Salvatore Monte Thermoplastic Materials and Foams Division Scholarships."

Sal is being honored as the scholarship namesake because he is the longest serving member of our SPE division. Sal has made significant contributions to the polymer engineering field, and he continues to provide outstanding support to our division by his work on the Board of Directors.

The scholarship will provide $4000 of funding to defray tuition costs for an undergraduate student in plastics engineering. Applications are currently being collected by the SPE. The winner will be selected by our division's volunteer judges and announced this summer, in time for the Fall, 2018 semester.
Sal will be recognized at the ANTEC® Conference, where he will present the Ananda Chatterjee travel award certificates to the recipients.

**2018 Ananda Chatterjee Travel Award Winners**

**Nahal Aliheidari** (Washington State University) and **Chongda Wang** (University of Toronto) are the recipients of the 2018 Ananda Chatterjee travel awards given by the Thermoplastic Materials and Foams (TPM&F) Division.



**Nahal Aliheidari** is a PhD student in mechanical engineering at Washington State University. She received a M.Sc. degree in mechanical engineering at Washington State University. She also earned a M.Sc. in Food Engineering from the College of Agriculture and Biosystem Engineering at the University of Tehran as well as a B.Sc. in Food Science and Technology from the College of Agriculture and Natural Resources at the University of Tehran. She has been active in the area of advanced materials with special interest in functional- engineering materials and biomaterials. She has been working on different material processing such as solution casting, foaming and extrusion. Developing the new materials for 3D-printing and characterization of 3D-printed specimen and their applications is another part of her research. Her current research field is development of novel materials with multi-functional properties and design of adaptive structures.

Nahal will present a paper at ANTEC® called, "Ultra-low density foams of nanocrystalline cellulose reinforced with polyvinyl alcohol." Nahal's work is targeted to foams that provide thermal insulation to conserve energy. Her work employs sustainable chemistry techniques, including water-based solutions and bio-based materials.

**Chongda Wang** is a PhD student at the University of Toronto working on Modelling and Visualization of Foam Injection Molding process. Besides the fundamentals of foaming phenomena in foam injection molding, Chongda's research interests also include the modeling of thermal and electrical performance of foamed polymers and composites. He is the author and coauthor of 10 journal and conference papers. He completed his bachelor degree in Mechanical Engineering at University of Toronto, during which he focused on Mechatronics and Robotics, Signal Analysis and Solid Mechanics.
Chongda will present a paper at ANTEC® on the subject of "Theoretical and Experimental Investigation of Bubble Growth in High-Pressure Foam Injection Molding." This work employs visualization experiments and mathematical modeling to predict bubble growth in high-pressure foam injection molding processes.

## EDUCATION COMMITTEE REPORT - CONTINUED

**SPE TPM&F Division Student Tour: Plastics Material Suppliers**

The Thermoplastic Materials & Foams Division of the Society of Plastics Engineers has provided a $2,000 grant to the Plastics and Polymer Engineering Technology department at Pennsylvania College of Technology for a student tour of plastics material suppliers in the Pittsburgh area. The two-day tour is scheduled for the April 26-27, 2018 semester and will include 10 students and 2 faculty members. Five facilities *(one under construction)* will be visited as detailed below.
Students interested in participating in the trip will apply for selection by submitting short proposals that describe how they will utilize and benefit from the knowledge gained from the experience. Approximately 10% of students in the Plastics program at Penn College will be selected.
FACILITIES: ◆Braskem ◆Nova Chemicals ◆Covestro ◆PPG ◆Shell Cracker site

## HIGHLIGHTS FOR TPM&F BOARD MEETING

*Meeting Date: February 27, 2018*
*6-8:00pm Central Time, Houston, TX*

ATTENDANCE

**Attending the BOD meeting in person:** *Donna Davis, Gary Wilkes, Chul Park, Sal Monte, Kathy Schacht, Patrick Farrey, Raed Alzubi, and Brian Grady.* **Attendance via on-line:** *Xiaoxi Wang, Theresa Healy, Max Wingert, N.S. Ramesh, Aaron Guan, Perry Vadhar, Stephane Costeaux, and Chad Zeng*

### CHAIR REPORT —XIAOXI WANG

Xiaoxi thanked everyone for attending the meeting. A special thank you to the education committee and membership committee for all their hard work and dedication to the board. Thank you to everyone on the board for your input. It looks like our division is running well and is financially healthy.

### TPM&F BOARD ELECTION AT ANTEC® 2018— DONNA DAVIS/RAYMOND SHUTE

Donna is still recruiting for new BOD members. The upcoming ANTEC® at the NPE is the time for re-elections and the board needs to cast their votes. Donna mentioned that the board is heavy in the FOAMS area but light in the thermoplastics section so that should be the area to recruit new candidates.

### COUNCILOR REPORT—PERRY VADHAR

The executive board meeting was held on January 18, 2018. As of Jan 1, 2018, the accounting software used by the society has been changed to QuickBooks. Old data is still available, but in view-only format. CEO, Farrey stressed that extra care was taken during this transition. SPE is moving from 430-line items to less than 100 in a new chart of accounts. There was some strategic discussions regarding membership revenue and rebates. With $832k in membership revenue, $160k goes back to affiliate groups in rebates. This represents 20% of membership revenue. There is concern that rebates are going to groups that are not providing enough member value, while more active groups are not getting enough. EB agreed to continue this discussion around effective rebate structures at their future meetings.

Jason Lyons, VP, organized a conference call on February 12, 2018 with all the Councilors. *This was an open discussion for Division Councilors to ask questions or express any concerns as they related to their respective Divisions or for the overall benefit of SPE.* It was mainly about how to recruit new members and advertise for new members.

Jason Lyons has posted Best Practices for various categories in The Leadership Lane. He spoke about best practices for technical programming, revenue generation, publications & promotions, operations, membership, educational support, community outreach, and awards and recognition. See the full councilor report on The Chain for details. The next councilor's meeting will be held on March 9, 2018 by teleconference.

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## MEMBERSHIP REPORT —ANSON WONG

Membership Trends

| | 02/2018 | 10/2017 | Difference |
|---|---|---|---|
| **Professional** | 510 | 500 | +10 |
| **Young Professional** | 34 | 42 | -8 |
| **Student** | 62 | 26 | +36 |
| **Emeritus** | 34 | 33 | +1 |
| **Distinguished** | 1 | 1 | 0 |
| **Total** | **641** | **602** | **+39** |

◆There is an improvement in the representation of the students' category with the free student membership drive initiative *(i.e., 32 students attendees of the FOAMS® 2017 conference added to the TPM&F Division).*

◆Total membership increased by 39 compared to Oct 2017.

**I. SPE Membership System**

◆Goal: Assess and work with SPE to improve its membership reporting system to help us design membership growth, and to improve our book-keeping on membership data.

◆Membership lists are being tracked (active vs. joined lists) to identify missing members due to data entry errors. Since 05/2017, all members have been accounted for by the system. This will be tracked monthly.

II. New Membership Growth

◆Goal: To attract new members from different groups and geography

◆Student Members

- ◆Partner with Education Committee to reach out to students regarding TPM&F *(Travel award, SPE U of T student chapter, etc.)*
- ◆Continue the free membership initiative for student attendees of TPM&F sponsored conferences

◆All Members

- ◆Recruit new members in TPM&F Sponsored conferences (PO, ANTEC®, and FOAMS®)
- ◆Recruit SPE E-members – A list has been provided by Allan Lee and there will be a communication plan in place in 2018.

## FOAMS® 2017 REPORT — CHAD ZHEN/GARY WILKES

For ANTEC® 2018, TPM&F has accepted 27 papers. There are 3 sessions: morning of Wednesday May 9, and morning and afternoon of Thursday May 10. There are also two talks relocated to a session *(New Technology Forum)* the afternoon of Monday, May 7. Due to a limited time slot, the sessions will run longer with minimal time for breaks. There was an issue that many papers had to be rejected due to the limited room space with the ANTEC® being held in conjunction with the NPE. NPE has a very long waiting list so they cannot accommodate more space. There were more paper submissions than time slots. In the future, there needs to be better planning. There will be a meeting within the next few weeks to finalize the program. Chul will send the link to the ANTEC® program.

## POLYOLEFINS CONFERENCE — DONNA DAVIS/ GARY WILKES

The Polyolefins Conference was similar to revenues of 2017. They registered 709 people *(after 15 cancellations),* also very similar to 2017. They had double sessions on Monday afternoon and triple sessions on Tuesday and double sessions on Wednesday morning. This reflects a reduction of two sessions overall, since they had four concurrent sessions on Tuesday in the past. It appears that having only three tracks on Wednesday makes for easier management of the space and choices to attendees.

For paper management and registration, eTouches was used. Therefore, the proceedings have been ported to the SPE Events app and will be available via the SPE website when released. (Already available to attendees.) Next year, they anticipate having a new paper management system available from SPE HQ, but those changes are not finalized yet. Utilizing one server for all papers and presentations (and registration) prevents confusion about "the most recent version". The theme of the conference was "Abundant Supply", reflecting the broad expansions for polyolefin producers anticipating needs to grow markets. The secondary theme of sustainability came about naturally, with plenary speakers starting the conversation and at least two sessions addressing sustainability. The plenary speaker on demand drivers particularly pointed to the potential impact of recycling and sustainability on net growth

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volumes. The Flexible Packaging Division session on Tuesday morning received good reviews, as did the Foams session on Wednesday morning (thanks, Chul!) Already, these sessions are pointing to ideas for next year. Robert Portnoy will continue as General Operating Chair and Fernando Cevallos-Candau as Technical Program Chair again for 2019. Mark your calendars: Feb. 24-27, 2019, Houston Hilton North.

## FOAMS CONFERENCE COMMITTEE — STEPHANE COSTEUX

FOAMS®2017 was a success. There were about 120 people /60 for the tutorial. Revenue was about $9,000 split between our division and Germany. There was some discussion about making sure this was for non-profit. Has this been resolved or do they still need help in Germany? They may need help from SPE HQ and will follow up with Scott.

FOAMS®2018

1- The FOAMS®2018 Organization Committee has been assembled. As suggested during the last board meeting, the conference chair role is shared between TPM&F and the Quebec Section.

| Role | Name | Organization | SPE div/section |
|---|---|---|---|
| Conference Co-Chairs | Marie-France Sosa<br>Xiaoxi Wang | Plastiques GPR<br>Boeing | Quebec<br>TPM&F |
| Technical Program Chair | Stephane Costeux | Dow-Dupont | TPM&F |
| Tutorial Program Chair | Professor Chul Park | University of Toronto | TPM&F |
| Student Poster Chair | Professor Chad Zeng | Florida State University | TPM&F |
| Student Scholarship Chair | Kim McLoughlin | Braskem | TPM&F |
| Hotel/hospitality Chair | David Beaumier | Groupe CTT | Quebec |
| Conference Treasurer | Chris Greene | Clariant | Quebec |
| TPM&F division treasurer | Maxwell Wingert | Procter & Gamble | TPM&F |
| Sponsorship Chair | Theresa Healy<br>Michelle Robitaille | Reedy Chemical Foam | TPM&F<br>Quebec |
| Best Paper Chair | Gary Wilkes | Dart Container | TPM&F |
| SPE HQ contact / website | Sue Wojnicki | | SPE HQ |

2- Venue / Date:

- Hyatt Regency Montreal. Very good location downtown, close to the Old port. Contract was signed. Negotiated rate is CAD250. Hotel reservation website is up an Many other hotels close-by
- Tutorial will be Sept 11-12, 2018; finishes at noon on Sept 12
- Conference will be Sept 13-14, 2018 (two full days)

3- Financial

Budget planning indicated break-even point at 85 attendees for fee structure similar to previous years. Main expenses are hotel and food. Agreement to do it in 3 payments (one by Quebec Section, one by TPM&F, and the third one 50-50).

Quebec Section will advance funds for all other charges, and SPE/TPM&F will collect registrations. Accounts will be settled between Quebec and TPM&F treasurers after the conference.

4- Registration fees

- Added special discount rate for postdocs (slightly more than students)
- Waiver for students presenting a poster
- Cocktail and banquet will be organized on September 13 in the evening.
  - Cocktail will take place along with the poster session. Open to all attendees
  - Award banquet part of standard fee for full registration but will be $50 for students to recoup some of the cost and balance budget. Quebec SPE Section is considering giving banquet vouchers to local students. TPM&F can give vouchers to non-local poster presenters and scholarship applicants to ensure their presence when awards are handed-out.

5- Conference website for FOAMS® 2018

- Conference information sent to Sue / SPE IT department. Includes call for papers, poster & scholarship flyers. Website should be ready in the coming days.
- Call for paper dates: Abstract due on May 1, 2018; Paper due June 15; Final revisions by July 15.
- BOD members will be asked to contribute to peer review of the papers mid-June

6- Next steps:

- Initiate call for Sponsors / Exhibitors.
- Keynote speakers
- Communications / email blasts *(when website is ready)*
- Tour

Future FOAMS® conference:

FOAMS® 2019 Sept 16-20, 2019
Spain M. Rodriguez Perez

FOAMS® 2020 Sept 14-18, 2020
US (TBD)

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## HIGHLIGHTS FOR TPM&F BOARD MEETING
(CONTINUED FROM PAGE 14)

For FOAMS®2020, the committee would like to determine a location. Some of the criteria are: university and/or relevant industry nearby; presence of a local section; transportation/access.
Several have been proposed:
East Coast: Charlotte, NC; Vermont; Pittsburgh, PA;
Midwest: Chicago, IL;
West Coast: Seattle, WA or Portland, OR
Additional suggestions for location in the US are appreciated (Need BOD members to chair or co-chair).

ADJOURN. Meeting was adjourned at 8:26pm. Motion to adjourn the meeting was made by Perry to officially end the meeting.



## COMMUNICATION REPORT – THERESA HEALY

L I N K E D – I N
TPM&F SITE

The TPM&F site on Linked-In has been updated and checked weekly for new members.

Click on the icon below to visit The TPM&F's Linked-In social media site.

Also, Don't forget to visit our Division Website
http://spetpmf.com/