



# The SPE Press

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November 2016

The Southern California Section of the Society of Plastics Engineers  
Local information on resources and education available to plastics professionals

## MOLDING TECHNOLOGY UPDATE

**Date: Thursday,  
November 17th, 2016**

### **So Cal SPE Workshop Series 2016**

**Milacron HIT Center  
15301 Barranca Pkwy  
Irvine, CA 92618**

#### **Registration info**

Registration: 8:30AM,  
9:00 Workshop, 1:00 Live  
demonstrations, 3:30  
Adjourn

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#### **WORKSHOP SERIES 2016**

**MOLDING MACHINE TECHNOLOGY UPDATE**

**HOT RUNNER TECHNOLOGY - THE NEW DEVELOPMENTS**

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## PRESIDENT'S MESSAGE



It is hard to believe that November is here and the Holiday season is just around the corner. I love this time of year – the changing of the leaves, the cooler temperatures and the warmth of spending time with family and friends. It is also a good time to look back on the year and reflect on what has been accomplished and start the planning for the year ahead. Our board at SoCal SPE has been hard at work all year long planning some amazing events and coming up soon is our Molding Workshop to be held at the Milacron Technical Center in Irvine on November 17th. This is our last event of the year and more details will be available in the coming weeks.

As we enter into the Thanksgiving Holiday we should all strive to be more considerate and helpful to others, to be more reflective in our thoughts and to be more focused on our gratefulness. I would like to take this opportunity to thank our members and sponsors for believing and supporting us throughout the year. I would also like to thank each board member and committee member who selflessly volunteer their time to help our fundraising events like the golf tournament, workshops and Trade Fair. Our SPE section can only continue its mission with the dedication and support of our volunteers.

We look forward to next year with hope and optimism. As you are celebrating this Holiday season and coming together with your family, friends and colleagues, please remember to be thankful for all that you have. Don't forget that this time of year is special and is a perfect time to let them know how much they mean to you and to show your appreciation.

Wishing you all a Happy Thanksgiving!

Tuan Dao  
President, SoCal SPE  
(714) 692-9492



## Why Join SPE?

Whether you're a plastics scientist or engineer, a business owner, marketing/sales expert, or any other professional in plastics, SPE membership can help you advance your knowledge and your career. The information you need to increase efficiency and productivity, develop your career, and add to your company's bottom line is literally right at your fingertips.

The Society of Plastics Engineers is home to nearly 20,000 plastics professionals in more than 70 countries around the world. SPE is the "go to" resource for plastics technical information.

### Each Month, we will explore one of the six key benefits of becoming SPE.

- Plastics InSight – A customized to your need Weekly Newsletter
- ***SPE Material database – Access "Tons" of material in the world of Plastics***
- Registration Discounts – on over 40 conferences and local meetings and events
- Plastics Engineering Magazine – Free subscription to leading
- SPE Online Technical Library -
- The Chain – Where Plastics Professional connect and get answers

Last month, we explored the much needed and most welcome benefit of reducing email overload by receiving a customized weekly newsletter that focuses on your areas of interest.

This month, we will explore how an SPE member can access over 125,000 datasheets by simply clicking few keys!

The Society of Plastics Engineers (SPE) and SpecialChem has announced a partnership that will offer SPE members full access to SpecialChem's Universal Selector database of plastics and additives.

Access to the Universal Selector, which includes 125,000 datasheets, is now available.



The partnership will greatly benefit SPE members according to Wim DeVos, CEO of SPE. "This new Materials Database resource we are offering with SpecialChem is an exciting match for SPE, enriching the value we offer our members," said Mr. DeVos. "Whether they are looking for materials with specific properties or searching for alternatives or even technical solutions, our engineers and purchasers will find this tool a very valuable asset."

"This strategic partnership with SPE is completely aligned with our corporate mission to help engineers faster select the products they need by giving them access to all products in the world and the knowledge to select them," said Christophe Cabarry, founder and CEO at SpecialChem. "Our Universal Selector proposes 10 dimensions of search including the 'new' property search. We constantly strive to standardize the heterogeneous ways suppliers publish product data and to add new products as soon as they are launched, which has proven to be valuable for both formulators and engineers."

SPE and SpecialChem will cross-promote the partnership at conferences and through digital and social media. For detailed information on this program for SPE members and special offers for new members, please visit [www.4spe.org](http://www.4spe.org).



## 2017 "Wonders of Plastics" Essay Contest



Society of Plastics Engineers

The Society of Plastics Engineers (SPE) presents the 17th annual "Wonders of Plastics" essay contest. Open to all middle/junior high and high school students, the essay must be sponsored by a teacher and must meet certain requirements (see Requirements for Submission, p 2).

Who may participate:

Any high school student from the Southern California Section of SPE is encouraged to participate. A particular call is made for industry members that may know a high school student that may want to participate (son/daughter, nephew, neighbor, etc.). The Southern California Section of SPE covers from San Luis Obispo in the north, to the border in the south to the border with Arizona in the East.

Topics to consider

**The Southern California Section is requesting essays covering the realm of Green Plastics or how Plastics Benefit Society. Example topics include but are not limited to:**

Renewable Plastics    Plastics in Food Packaging    Biodegradable Plastics  
Plastics Recycling    How Plastics Benefit Mankind    Medical Plastics  
Advances in Plastics    How Plastics Save Energy    Your Own Plastics Topic

All essay submissions must be received at the SPE Section address, listed below, along with the entry form, by the announced deadline.

In the past the awards have been \$500 for first place, \$250 for second place, and \$100 for third place. The students school receives a matching award as well.

Entry forms may be copied, but each essay must be attached to a form; essays will not be returned and become the property of SPE. Essays may be co-authored.

Submit your Essay or questions to  
SPE Southern California Section  
Victor Okhuysen  
3801 W. Temple Ave. Bldg 17-2635  
Pomona, CA 91768  
Tel: 909/869-2698  
Email: [vfokhuysen@cpp.edu](mailto:vfokhuysen@cpp.edu)

**Entry must be postmarked by deadline of January 15, 2017!**

**[CLICK HER FOR MORE INFO AND TO APPLY](#)**

## Understanding Fountain Flow – Is mold filling FIFO (First In, First Out)? The answer will surprise you!

Plastic flow is laminar. Refer to Figure 1. When the plastic injection starts and the plastic first touches the cold mold it freezes at the walls of the mold. The plastic that is injected behind this melt pushes its way through the center, moves ahead of the frozen layer and ends up mold wall just ahead of it. The result is an 'inside – out flow' and the flow front looks similar to a water fountain and is therefore called as fountain flow.

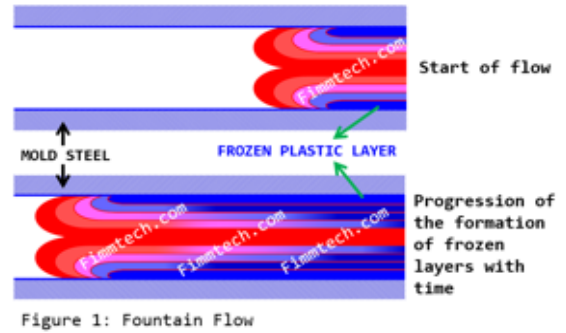


Figure 1: Fountain Flow

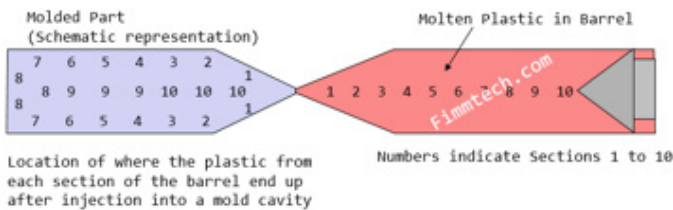


Fig2: Relationship between position of the sections in the barrel and their position in the final molded part

If we divide the plastic melt that is ready for being injected into the mold into various sections, it is interesting to see where each of these sections end up. The plastic that is in the nozzle tip forms the skin of the sprue whereas the center of the sprue contains the plastic from the very back of the melt that was in

front of the check ring. Refer to Figure 2 that shows a schematic cross section a mold and the progression of the melt marked by the numbers. For example, in the barrel Section 1 is in the nozzle tip. When this gets injected into the mold, it will end up on the skin of the part that is closest to the machine nozzle. Section 2 will get pushed further and will form the skin on the part that is ahead of Section 1.

To answer the question, if the mold filling (not exit out of the nozzle tip) a FIFO process? Absolutely not. Is the molding process a LIFO process? Absolutely not. It is a combination of the two! For example, the plastic in the sprue of the part is made up of the plastic that was in the front of the built up shot in the barrel whereas the inside of the sprue is made up of the plastic that is at the back of the built up shot. Please send me a quick email at Suhas at [fimmtech](mailto:fimmtech) and let me know if read this article – it will mean a lot for us at SPE to understand the number of readers of this tech articles.

*Continued from page 5...*

Understanding fountain flow can help in troubleshooting defects in molded parts. If a cosmetic defect is always located in the same spot one could backtrack the possible location of the melt to figure out the source of the problem. A pass/fail criteria is often developed, where a threshold of weight and height for failure is determined. Below that threshold the test plaque will typically withstand the impact, above it, the plaque will fail.

## MEMBERSHIP SPOTLIGHT

### SoCal SPE Wants YOU to Become a Member

The SPE Southern California Section is, for a limited time, offering one FREE registration to a single, exclusive local technical event for those who sign up for an SPE Membership! To be eligible for this special offer, visit our website @ [socalspe.org](http://socalspe.org) to check out the event calendar and register as an SPE Member! Once a member, you will be sent a voucher to bring to the SoCal SPE event of your choice! Offer also applies to expired memberships. Don't let this opportunity pass you by, become an SPE member today!

For questions, contact Ashley Price at 562-217-1377 or [aprice@ethorn.com](mailto:aprice@ethorn.com).

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The Chain is a new online community platform developed by the Society of Plastics Engineers to enhance networking and collaboration with plastics professionals around the world. It provides tools for individuals to share information, ask for help, discuss problems, exchange lessons learned, search for information... or simply stay connected with colleagues in the industry.

People logging into The Chain are given access to all of these features and more—and they've been joining and logging in at a fast rate since the platform officially came online in early 2015.

Tech Talk is by far the most popular forum. Plastics professionals from around the world are coming together to discuss current issues felt by many engineers, exchanging ideas on how to tackle these problems moving forward. As Tech Talk becomes more well-known and popular this will be the premier source of information and trouble-shooting for plastics professionals around the world. Tech Talk is proving to be the Place where members can go for help solving problems, making recommendations, and general industry knowledge on a variety of technical topics. There are currently numerous ongoing discussions covering subject matter ranging from material applications, testing methods, and operational challenges to industry innovations.

*....continued on page 17*

....continued from page 16



At the NPE show in March, SPE launched a free “e-Membership”—available to any professional with an interest in plastics and polymers. The e-Membership gives an individual full access to Tech Talk and SPE Café, and read-only access to the Career Central forum. All of these benefits are free as part of the SPE e-Membership.

Individuals also have the option of a Premium membership, which provides full access to all of the forums in The Chain, access to the largest technical library in the plastics industry, networking access to 20,000+ contacts worldwide, registration discounts to SPE conferences, subscription to *Plastics Engineering* magazine, and so much more, for the traditional yearly rate.

With the official opening to the world-wide plastics industry, SPE expects this platform to grow exponentially in the coming years as the reference platform for plastics technology. Expectations are that in the near future people will say: “You have a technical issue in plastics? Go to The Chain and you’ll find the answer!”

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Check it out for yourself at <http://thechain.4spe.org/home>



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## Society of Plastics Engineers

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## Membership Application

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- Composites - D39
- Decorating & Assembly - D34
- Electrical & Electronic - D24
- Engineering Properties Structure - D26
- European Medical Polymers - D46
- European Thermoforming - D43
- Extrusion - D22
- Flexible Packaging - D44
- Injection Molding - D23
- Medical Plastics - D36
- Mold Making & Mold Design - D35
- Plastics Environmental - D40
- Polymer Analysis - D33
- Polymer Modifiers & Additives - D38
- Product Design & Development - D41
- Rotational Molding - D42
- Thermoforming - D25
- Thermoplastic Materials & Foams - D29
- Thermoset - D28
- Vinyl Plastics - D27

**Geographic Section Member Groups** - Network with local industry colleagues.

- ☐ Alabama/Georgia-Southern
- ☐ Asean\*
- ☐ Australia-New Zealand
- ☐ Benelux
- ☐ Brazil
- ☐ California-Golden Gate
- ☐ California-Southern California
- ☐ Caribbean
- ☐ Carolinas
- ☐ Central Europe
- ☐ China
- ☐ Colorado-Rocky Mountain
- ☐ Connecticut
- ☐ Eastern New England
- ☐ France
- ☐ Hong Kong
- ☐ Illinois-Chicago
- ☐ India
- ☐ Indiana-Central Indiana
- ☐ Israel
- ☐ Italy
- ☐ Japan
- ☐ Kansas City
- ☐ Korea
- ☐ Louisiana-Gulf South Central
- ☐ Mexico-Centro
- ☐ Michigan-Detroit
- ☐ Michigan-Western Michigan
- ☐ Middle East
- ☐ Nebraska
- ☐ New Jersey-Palisades
- ☐ New York
- ☐ North Carolina-Piedmont Coastal
- ☐ Ohio-Akron
- ☐ Ohio-Cleveland
- ☐ Ohio-Miami Valley
- ☐ Ohio-Toledo
- ☐ Oklahoma
- ☐ Ontario
- ☐ Oregon-Columbia River
- ☐ Pennsylvania-Lehigh Valley
- ☐ Pennsylvania-Northwestern Pennsylvania
- ☐ Pennsylvania-Philadelphia
- ☐ Pennsylvania-Pittsburgh
- ☐ Pennsylvania-Susquehanna
- ☐ Portugal
- ☐ Quebec
- ☐ Spain
- ☐ Taiwan
- ☐ Tennessee-Smoky Mountain
- ☐ Tennessee Valley
- ☐ Texas-Central Texas
- ☐ Texas-Lower Rio Grande Valley
- ☐ Texas-North Texas
- ☐ Texas-South Texas
- ☐ Tri-State
- ☐ Turkey
- ☐ United Kingdom & Ireland
- ☐ Upper Midwest
- ☐ Utah-Great Salt Lake
- ☐ Virginia
- ☐ Washington-Pacific Northwest
- ☐ West Virginia-Southeastern Ohio
- ☐ Western New England
- ☐ Wisconsin-Milwaukee

\*Asean: Indonesia, Malaysia, Phillipines, Singapore, Thailand, Cambodia, Laos & Vietnam

**Special Interest Groups** - Explore emerging science, technologies and practices shaping the plastics industry. Choose as many as you would like, at no charge.

- Advanced Manufacturing / 3D - 033
- Bioplastics - 028
- Failure Analysis & Prevention - 002
- Joining of Plastics & Composites - 012
- Marketing & Management - 029
- Non-Halogen Flame Retardant Tech. - 030
- Plastic Pipe & Fittings - 021
- Plastics Educators - 018
- Plastic in Building and Construction - 027
- Quality/Continuous Improvement - 005
- Radiation Processing of Polymers - 019
- Reaction Injection Molding - 032
- Thermoplastic Elastomers - 006

Recommended by (optional) \_\_\_\_\_ ID# \_\_\_\_\_