



The SPE Press

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October 2015

SOCIETY OF
PLASTICS ENGINEERS

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

Date: Thursday
October 22, 2015

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Registration: 5:30 pm
6:00 pm - Dinner &
presentation

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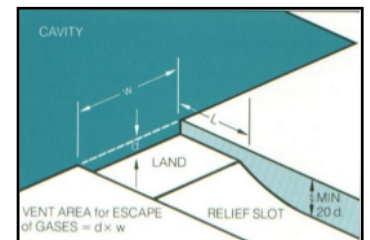
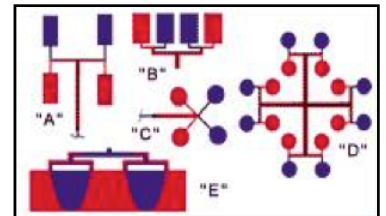
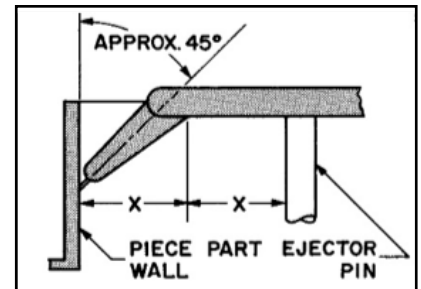
SPE Dinner Meeting

All about Gate, Runner and Vent Design

The majority of cosmetic issues stem from poor design and lack of understanding of three key items, Gate, Runner and Venting. The purpose of the runner system is to convey the hot molten material from the sprue to the gate with minimum loss in pressure. Runners also control cooling time in small parts. Full round runners are the most efficient for minimizing heat loss and pressure. Balanced runner design is imperative for making quality parts.

Gate design and gate location can have drastic effect on overall part quality with issues ranging from cosmetic defects, part packing, part sticking, warpage to part dimensions.

Non-uniform venting is the number one cause of mold fill imbalance. Inadequate venting can lead to poor mold filling, burn marks, weak weld lines, internal bubbles, high stress concentration, sink marks, longer cycle time resulting



Continued on page 2

Advanced registration is requested. Register online at www.socalspe.org or complete the registration form and send by email socal.spe.news@socalspe.org or fax 909-625-2847



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	Total	\$_____00

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Continued from page 1

from slow injection velocity, mold deposit build up, decorating and adhesion problems etc. Sizing the vent is extremely critical.

The presentation will focus on practical aspects of gate, runner and vent design. The speaker will draw upon his over 30 years of technical service experience and share the knowledge acquired from working with thousands of OEMs, molders and tool makers.

**Speaker: Tuan Dao,
Technical Consultant
Polymer Engineering Group**

Tuan Dao, BChE, MSME, is an independent consultant to the plastic industry and an instructor at the UC-San Diego Extension where he teaches plastic engineering product design. He was previously a Senior Technical Specialist at the DuPont Company, Engineering Polymers Division. He has over 25 years experience in

Plastic Engineering with applications in various industries such as automotive, medical, electrical/electronics, irrigation and consumer. His expertise includes product design, finite element analysis, mold design, runnerless technology, and optimum molding. He has been a senior member of SPE since 1984.



President's Message



In the last newsletter I wrote about promoting plastics knowledge through science and technologies. Training and education play a big role in achieving that goal. We need to have strong technical programs with well-designed seminars and technical workshops throughout the year. Our website has been upgraded and now I'd like to upgrade our newsletter as well. We will publish technical articles with information that is useful to our molders and end-users in our community. Many readers have posed some interesting and very pertinent questions involving molding techniques, tooling challenges, part design, material properties and

performance when working with plastics. All of these are interrelated for maximum productivity molding. In our future newsletters we plan to have a section that is devoted to answering some very significant questions from readers that may well have application in your own shop.

We just had a plant tour of Niagara Bottling in Ontario with good turnout. Thanks to Ashley for taking her time and effort to coordinate this event. This month on October 22nd, we will have a seminar "All about Gate, Runner and Vent Design." The speaker will discuss those fairly tricky aspects of mold design with particular emphasis on its relationship to the properties of the finished molded parts. And on November 17th, SoCal SPE and Edison will cohost a workshop "Energy Efficient Plastics Manufacturing Operation." More details will be available shortly.

Lastly, we encourage you to get involved in our local section and we invite you to attend our seminars and participate in our board meetings. If you have any suggestions or creative ideas that would help our section to grow, we'd like to hear from you.

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

Plant Tour of Niagara Bottling, LLC

We had a successful kick-off event thanks to Niagara Bottling, LLC! If you missed the plant tour here are a few highlights.

Niagara is the largest North American privately owned bottling company with 19 manufacturing sites nationwide! The plant we were privileged to tour is located in Ontario, California and started its manufacturing in 2002. This facility has 6 high-speed bottling lines, filling both purified and natural spring water into half liter and 1-gallon plastic bottles. Niagara also utilizes a significant fraction of

post-consumer recycled PET in their manufacturing process, improving their bottom line and contributing to sustainability efforts. Niagara is positioned as the most vertically integrated bottling company in the industry. Their efficient, streamlined manufacturing process has helped Niagara to become the largest producer of private-label water in North America!

Thank you to Niagara for allowing us to tour your plant! Thank you to all the SPE members who came out to join!



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Book Review

Selecting Injection Molds: Weighing Cost versus Productivity

By Herbert Rees and Bruce Catoen

Reviewed by Vishu Shah

Given the competitive nature of the global economy, manufacturers are constantly challenged to produce the lowest possible cost parts. Also there is mounting pressure to cut cost in all areas including tooling. The fact is that the lowest cost tooling cannot produce lowest cost parts. In *Selecting Injection molds – weighing cost versus productivity*, the authors Herbert Reese and Bruce Catoen emphasize time and again that the ultimate goal is not to produce the lowest cost mold but to produce the lowest cost part. The book presents the information in a new way which will appeal to everyone from novice to experienced, engineers, buyers, planners, designers and managers. The book answers the most frequently asked question “how to get the lowest possible cost tooling” by rephrasing the question to “how I can get the best product at the lowest cost for the expected production”. Mold cost, mold quality and cost of the product are inseparable and this is clearly shown throughout the book.

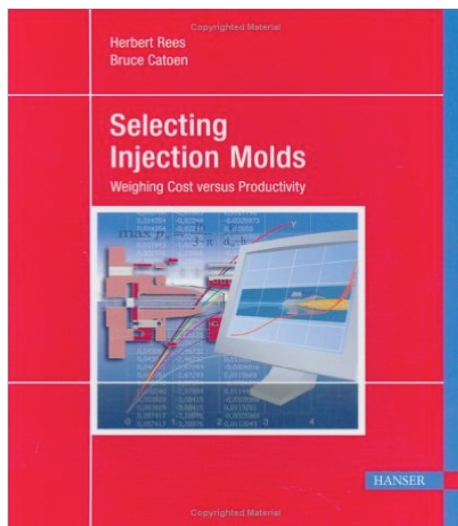
After a brief introduction about the injection molding machine, injection mold and basic elements of an injection mold, the authors

focus on product design and importance of examining the product design and its specifications, unnecessary tight tolerances, and to highlight the significance of some of the features of the product design on the expected productivity. For

example, one can redesign the product and eliminate side cores or change the flank angle of the thread to allow the part to be stripped off the core rather than unscrewing. Also discussed are the cost associated with surface finishes, engraving and special features such as holes and counter bores and hinges and snaps for assembly.

If you are looking to justify the cost of the book, look no further than chapter 3 on cost factors affecting

the productivity. There are important tips and suggestions with cost justification examples highlighted through out this chapter including cooling efficiency, forecasting cycle time by considering the type of plastic molded, wall thickness reduction, mold materials, venting, shut-off nozzles, ejection methods and timing of ejection. Case in point: round and rectangular products such as containers should be ejected by pushing them off the core rather than pulling them off to save valuable cycle



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by pushing them off the core rather than pulling them off to save valuable cycle time. Minimum number of cavities required, machine hour cost per unit molded, mold cost per unit molded and determination of preliminary estimate of product cost are also discussed.

Chapter 4 covers the considerations for available alternatives for the mold such as dedicated mold versus universal mold shoe and one product versus family mold. Size and location of the gate for various shapes of products, hot runner molds, stack molds and molds for insert molding along with advantages and disadvantages are discussed in great detail. Last two chapters provide an in depth look at major costs associated to make a mold, mold pricing, delivery, warranties and guaranties and patents. Appendix section increases the

versatility of the book by providing the reader with guidelines, sample forms, characteristics of a good high production mold, and even a valuable advice for the mold designer.

Selecting Injection Molds – weighing cost versus productivity is a very informative and clearly written book that presents a great wealth of information in readily accessible manner. Throughout the book there are useful side bar notes for quick reference and to accentuate the important points along with numerous colorful illustrations and photographs. I recommend it highly to everyone involved in injection molding and tooling to take advantage of the authors' years of invaluable experience gained from working with a premier company specializing in high volume, high productivity, and fast cycling molds.

Save the Date:

November 17, 2015 10:00 am - 3:00 pm



SCE Energy Education Center
Irwindale

Energy Efficient Plastics Operation

TOPICS:

- Energy Efficient Plastics Operation - New developments - Overview
- Energy Efficiency Program updates and benefits (rebates, incentives, etc.)
- Lunch and Networking
- Panel discussion - Plastics Industry Trends and Hot Topics
- Tour of SCE Energy Education Center
- Cost: Compliments of Southern California Edison & So. Cal. SPE
- **Preregistration required:** details coming soon


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UPCOMING COURSES



The College of the Extended University

Cal Poly, Pomona

Winter 2016: **Plastics: Theory and Practice**

Spring 2016: **Plastics Product Design and Tooling For Injection Molding**

Comments Provided by Students

- *Great course, very instructional...love the PowerPoint notes*
- *The instructor uses examples that are relevant to my industry/field*
- *The overall explanation of the basics of Plastics was very clear and concise, explained in plain English without having to use big and sophisticated words to explain theory or function*
- *The course's major strength was instructor's ability to relate to real life experience*
- *Very Practical – I highly recommend to anyone new to plastics industry*
- *Hand-outs are great, I refer to them on regular basis*

PLASTICS 101 - Theory and Practice

Winter 2016

This course is designed to introduce students to basic concepts and techniques used throughout the plastics industry. The objective is to expose everyone to the fundamentals of Plastics, product design, basic processing techniques, secondary operations and tooling. The attendees will be given handouts showing *How* and *Where* to get more detailed information on variety

of Plastics related-topics. This course would be valuable to all technical, scientific and engineering personnel, either entering field of plastics or interested in broadening their knowledge of materials and processing techniques. It is also suitable for individuals in plastics sales, marketing, purchasing, and quality assurance.

Plastics Product Design & Tooling for Injection Molding

Spring 2016

The first portion of this combined course provides an overview of the design process for injection molded plastics parts. The emphasis is on concurrent engineering practices, which leads to elimination of barriers between various engineering groups, toolmaker and manufacturer. The student will learn about importance of proper material selection, part design

process, part design fundamentals, manufacturing (moldability) considerations, design for assembly, tooling considerations, rapid prototyping techniques and testing. Students are encouraged to share their knowledge of product design success/failure stories in a group discussion format. Design fundamentals discussed are applicable to

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parts designed for all plastics processing techniques. In the tooling portion of the course the emphasis is on, types of molds, mold material selection, various mold components, mold design principles, cooling, venting, draft considerations, shrinkage, mold polishing, and tool surface

enhancements techniques. Topics such as use of simulation software to enhance mold design, how to improve productivity, reduce down time, and lower maintenance costs by optimizing tooling design will be covered in detail.

More information call **The College of the Extended University 909-869-2288** or visit: <https://www.ceu.cpp.edu/courses/cert/EM/PET.html>
Or the Instructor: Vishu Shah 909-465-6699

SPI, SPE Announce Joint Membership Option for Students at NPE2015

Under an SPI and SPE agreement, students looking to become an SPE student member will have the option to do so for free if they also join SPI as an e-member. The student's membership dues would be waived and SPI and SPE would share the

membership cost for each student that takes advantage



of this offer. By offsetting the cost of membership, both SPI and SPE hope to make it easier

for students to take advantage of each organization's respective educational and networking opportunities, while expanding opportunities for plastics students and young professionals who, due to financial hardship, might've been reluctant to participate.

[Read more.....](#)

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SoCal People

This is a new feature for our news letter. We will note changes of positions, opening of new companies, interesting facts about our plastics community and humorous stories told in good taste about our members. Please forward all of your gossip to me, Kerry Kanbara, kerry.kanbara@gmail.com

Michael Espinosa – Michael is a new member of the SPE Board of Directors. Michael is an executive with Triangle Sales, a long time Sales firm which provides medical customers with qualified vendors. The firm was formed by Larry Espinosa, a long time sales expert to the molding community.

Alex Parelus – Alex is one of the SPE Board of Director's newest members. Alex is the West Coast Manager for iD Additives, inc. Tel. (630) 877-0152

Some of the innovative products his company markets include chemical foaming agents, purging compounds and mold releases. This

month iD Additives is announcing their new line of liquid color and additives, which are manufactured at their facility in Texas. The dispersion system is an advanced liquid colorant and additives system for the plastics industry. They do single pigment and custom liquid dispersions, including special effects. You may email Alex at: aparelus@idadditives.com



Kerry Kanbara – President, Premier Industries US and long time member of SPE SoCal's Board of Director has become a 7 time grandfather. On September 16, Lincoln Mistrapa was born to his daughter Gabriel Mistrapa at 1PM. Mother and baby are doing great.

For Your Information

Salaries Continue to Rise in Plastics, with High Job Satisfaction

June 10, 2015- Optimism remains high for employees in the plastics industry, as average base salaries grew 0.7% from the previous year to \$104,722, and job confidence and growth expectations remained high for both managers and non-managers, according to the 2015 Plastics Salary and Trends Survey. [Read more....](#)

Stop Searching for the 'Cool' Side of the Pillow

While researchers disagree on how much sleep we really need, it is widely established that in order to fall asleep, your body temperature has to drop three degrees. Heat buildup results in tossing, turning and a fitful night's sleep - cooler environments encourage a longer, more restful sleep. Comfort Revolution has an innovative solution to a commonly known criticism of memory foam - heat. [Read more...](#)

Promote Your Business: Advertise

Dear Plastics Professional,

The Southern California Society of Plastics Engineers has been publishing its Newsletter for over 40 years. Our newsletter reaches over 2,000 Plastics Industry Professionals on a monthly basis to educate, inform and assist.

Many companies have taken advantage of this opportunity to connect with potential customers and have received value for their marketing dollars.

An all new colorful digital edition of the newsletter has been well received and well read. To increase the reach and value we have added many new features including Technical articles of practical value written by experts, review and listing of useful software, book reviews, local and national news,

upcoming events, member spotlight, etc. Local educational opportunities and scholarship activities are also highlighted.

To give more exposure to all the sponsors and advertisers, we are adding a new section "Know Your Sponsors." This section will allow advertisers to showcase their company and services.

Your advertisement also helps offset the cost of preparing and distributing the newsletter and raise much needed funds to support educational activities, scholarships and low cost technical programming.

Please contact Director of Advertisement Michael Espinosa at michael@trianglesalesinc.com

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Color ads are best as the newsletter is posted on the web. Mailed copies are printed black and white. To view current newsletters you can visit the section website at www.socalspe.org

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Triple	Portrait	2 (w) x 10 (h)	\$135
Half page	Landscape	7 (w) x 5 (h)	\$150
Full page		7 (w) x 10 (h)	\$300

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