The SPE Press

June 2014

The Southern California Section of the Society of Plastics Engineers

www.socalspe.org

Local information on resources and education available to the plastics profession

Society of Plastics Engineers

***32nd** Annual Golf Tournament for Plastics Education*

Thursday, June 19, 2014
12:30PM Shotgun Start
(11:00AM check in)
scramble format

Sierra La Verne Country Club
6300 Country Club Dr. La Verne, CA 91750 ph 909-596-2100 sierralavernecc.com

The Southern California Society of Plastics Engineers is proud do host its **32nd Annual Golf Tournament for Plastics Education.**

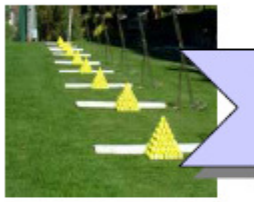
Golfers will enjoy our return to the exclusive Sierra Lavern Country Club. Located in the rolling foothills of the majestic San Gabriel Mountains the course offers a cool climate surrounded by great natural beauty.

Event proceeds help support the SoCal SPE education and scholarship programs.

Join in after the tournament for the golf awards presentation and dinner (6:00PM)

SPE will also formally present the George Epstein Scholarship http://socalspe.org/Scholarships.html

Past presidents are invited for our traditional informal past presidents meeting



REGISTER ONLINE www.socalspe.org

*Low Team
*Low Gross
*Longest Drive
*Closest to Pin

Any donations in the form of Raffle Prizes, Tee Sponsorship, Cash or Services for this fundraiser will be greatly appreciated. Your contribution will be recognized at the tournament.
Note: If paying by credit card you can also register online at www.socalspe.org

Pricing	$ SPE member / $ non-member	
☐ GOLF & CART+DINNER	$120/$140.00 ea	_____
☐ GOLF & CART only	85.00/$95.00 ea	_____
☐ DINNERBANQUET only	$45.00/$55.00 ea	_____
☐ SPONSOR	tee$100.00 / flag$250.00	_____
Sponsor - Sign at Tee $100 or Company Pin Flag $250		
☐ EDUCATION/SCHOLARSHIP donation	$	_____
☐ I plan to donate a raffle prize or other services		
TOTAL		_____

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Signature _____

Event coordinators:
Kerry Kanbara 626-966-0302
Rick Hays 714-473-9598
Em: kerry@piustech.com

Make checks payable to: SPE

Mail to: Tom Tudor c/o SPE
7478 N Fork Rd.
Highland, CA 92346

4/27/2014

Fax 909-625-2847 *(NO REFUNDS FOR CANCELLATION AFTER 06/04/14)*

We are on Facebook! Like our page to keep current on our chapter activities.
https://www.facebook.com/pages/Southern-California-Section-of-the-Society-of-Plastic-Engineers/699425046748541

President's Message

June is upon and that means it is time to dust off your golf clubs and hit the golf range. We will be having our 32 Annual Golf Tournament for Plastics Education. I look forward to seeing everyone at the Sierra La Vern Country Club on June 19. We will be having a Longest Drive Hole and some Closest to the Pin Holes. If you want your company noticed place your order for a Tee Box Sponsorship. We will recognize the winning team with a gift and we will have door prizes raffled off.
Schools will be coming to a close throughout the month of June and Graduations are here. This is a busy month for everyone. Keep your cool and before you know it July will be here. I wish everyone and their families a safe July 4th and look forward to seeing you in August at our annual Western Plastics Trade Fair.

Rick Hays, SoCal Section President
714-523-8050 • rhays@ethorn.com

SOCAL SPE SPONSPOR PROGRAM

Join our Sponsor Program to help fund our scholarships, programs, workshops and technical meetings. We are a California non profit organization; your contribution may be Tax deductible. Please choose one of our support levels.

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SoCal Section SPE will acknowledge all Platinum, Gold, and Silver sponsors in our newsletter and all of our regular meetings.
To become a sponsor, contact:
John Szary, 714-974-3999

May Meeting Wrap up.

By *Rick Hays, SoCal Section President*

On May 22, Southern California SPE welcomed Bryan Burgess from Reedy International as a Guest Speaker at Jagerhaus. Bryan presented Blowing Agents and discussed the different ways to reduce part weight. He expanded on the advantages of blowing agents and nucleation. He also listed the limitations. Bryan stated the Exothermic (AZO) blowing agents are having more and more restrictions placed on them. Reedy International specializes in Endothermic Blowing Agents. We had several great questions from the audience.
Victor Okhusen brought over 6 of his students from the Cal Poly Pomona, Manufacturing Club.

The molding process is a science and an art at Winzeler Gear

By Heather Caliendo
Published: March 19th, 2014

Is the molding process a science or an art? At Winzeler Gear, you don't have to separate the two. The company blends both in order to design and manufacture high precision high-tolerance molded plastic gears for the automotive, lawn and garden and office automation industries.

From the gallery of Fashion Gear Art to a distinctive new machine design and the walls of its facility in Chicago, you see the influence of modern art, fashion, design, and contemporary engineering in all aspects of the business.

Winzeler Gear has adopted the principals of scientific molding as a foundation in their business model. These principals are used to develop and control 100% of all molding processes, ensuring minimum variability in gear dimensions and material integrity. With full corporate investment, all of its process engineers are trained and certified by RJG Inc., a provider of injection molding training, technology and resources, to assure they understand the science of molding and the scientific approach to process development and control. This specialized training in scientific and de-coupled molding allows Winzeler to develop and maintain a precision production process for all gears manufactured in their facility.

To develop the process, cavity pressure sensors are used at the prototype molding phase of each program. If gears molded with the prototype process meet dimensional and durability requirements, Winzeler can ensure a smooth transition from prototype to production by matching the pressure fill curve template. When in production, the RJG computer must accept the process every cycle before the gears are allowed to flow into a "good" part container. The approval signal is stored on a production server, providing a record of 100% process validation by cycle with a date stamp.

This systematic approach to molding is the core of Winzeler Gear's philosophy to maximize quality and consistency without subjective intervention.

Long-time partners

If both art and science serve as the backbone of the business, you can also say consistency does as well. The company has worked with both Engel and DuPont for more than 30 years.

As the company's prime material partner, 90% of all the company's molding material is supplied by DuPont, with the majority of that material being Delrin acetal resin, which is suited gear applications. The two companies also work closely on research and development and global marketing.

Engel is Winzeler's only machine supplier.

"The Engel machines are durable and reliable, which serves us both well," said John Winzeler, president of Winzeler Gear. "Re-qualifying machinery for the automotive business is difficult, and the long life of the Engel press means that we seldom have to go through the procedure. Winzeler Gear produces high-quality, high-precision gears, and for that we require an injection molding machine that meets the same standards."

Recently, Engel installed five of its e-victory injection molding machines -- four Engel e-victory 200/65 models and an Engel e-victory 740/160 -- at the Winzeler Gear facility in Chicago.

All gear production is performed on horizontal Engel machines, with more 50% of the 39 machines in the facility being tie-bar-less.

"The Engel tie-bar-less design provides us with the ultimate flexibility when designing our automation, and is the only machine we purchase" Winzeler said. "The molding plant dynamics would be changed completely if we had to rely on conventional machine designs."

The company uses a combination of linear and six-axis robots when automating its systems, along with automated box loading with bar coding traceability. The focus on automation is to ensure consistency of production and eliminate human intervention.

In addition, Winzeler Gear engineers have developed a plant wide mold transfer and storage system. The team designed the system, including a mold cart, with storage centers located near the machine cells. Each storage center (or mold rack) holds approximately 10 molds, which are stored within easy access of the machine they run on as opposed to one large central storage area. The company says that this allows for a much quicker mold change and improved efficiency.

Will 3D printing of cores & cavities be disruptive to moldmaking?

By Clare Goldsberry
Published: June 9th, 2014

I just finished another article on a manufacturing company that molds the plastics components for its products in-house, and is using additive manufacturing to make the cores and cavities for its molds - in less than 24 hours. That's the second article I've written recently about using 3D printing, aka additive manufacturing (AM), to build cores and cavities to enable the injection molding of the actual parts.
Back in the 1990s, as I watched what was then commonly called "rapid prototyping" slowly catch on among manufacturers as a method of producing prototype parts via technology such as SLA, SLS and FDM, I wondered if it wouldn't be a great technology for moldmakers to adopt for their shops as a value added service. Moldmakers seemed to ignore it for the most part. The service bureaus seemed to be ahead of their time, and they sprang up, consolidated and died an agonizing death.

By the early part of this grand new century, some forward-thinking companies such as Stratasys and 3D Systems - now two of the biggest names in 3D printing - began to explode and rapid prototyping, renamed 3D printing and then officially called additive manufacturing, roared back to life. New materials were being developed so that engineers could get parts in the actual material of the end use component. New machines were evolving, prices dropped, some became desktop models, some were touted as being as almost as easy to work as a Play-Doh maker.

I kept waiting for moldmakers to see the light and install 3D printing as an added value service for their customers, but it didn't happen. Even though better materials, a wider variety of materials and bigger and better 3D printers came online, moldmakers remained on the sidelines.

EOS GmbH in Germany developed a new technology called "direct metal laser sintering" or DMLS, and I thought for *sure* moldmakers would get excited about AM using powdered metal. I had visions of cores and cavities being "built," dropped in a mold base and a few hundred parts injection molded in a matter of 24 hours. That excited me! Obviously, I'm not a moldmaker.

I toured what was then Morris Technologies in Cincinnati (before they were purchased by GE Aviation), and was so excited about what they were doing in printing cores and cavities, that I had them come and speak at an AMBA Convention. They hand-carried a core and cavity set to the meeting, and told how quickly the prototype mold or "bridge tool" could be built and actual molded parts delivered to the customer that I thought for sure the excitement would be overwhelming - but it wasn't.

Okay, here we are in 2014. I'm headed off to the RAPID 2014 (aka BIG M) 3D printing trade show, which ironically is the same week and about 40 miles from the Amerimold trade show, which I'll also be attending. RAPID is an exciting show - so many things happen each year between trade shows that I never see the same thing from year-to-year. It's exciting stuff.

A few mold manufacturers have adopted 3D printing and are printing prototype parts, and cores and cavities from ABS using FMD, and powdered metal using DMLS. But not many take this business seriously. They should. It's a great add-on business to moldmaking and 3D printing has taken North America by storm. I can see that it would excite customers - particularly those in a hurry for test parts - and now even end-use parts.

Materials have evolved to the point that many companies are using 3D printed parts in jet engines, vehicle components, and much more. They're skipping the mold. And that's why mold manufacturers need to be worried. Not that the capability exists to make these 3D printed parts in volume - it can't. Yet.

But technology is moving forward and it's moving fast. More than two decades of the evolution of rapid prototyping/3D printing/additive manufacturing has passed and the window is closing for that opportunity to provide this service to customers. Many OEMs - like Ford for example - have installed their own 3D printing divisions to see for themselves what can be done. And many new things can be done, many end-use parts made, with a mold - or without one.

Moldmakers better look before it's too late.

SoCal Plastics Manufacturers Events Calendar

32nd Annual Golf Tournament for Plastics Education

June 19, 2014 - Sierra La Verne Country Club - **La Verne, California**

Western Plastics Trade Fair - VI www.socalspe.org/WPTF

August 14, 2014 - Phoenix Club - **Anaheim, California**

For information on the events listed above contact:
Rick Hays 714-523-8050 or visit the Southern California Section Website www.socalspe.org

National Events	Online Presentations
Organized by National SPE. Industry related conferences and seminars held throughout the United States. *National SPE Seminar & Conference* ***PH: 203-775-0471*** ***www.4spe.org***	Simple and convenient ways to gain practical technical and business knowledge about the plastics industry. *One hour presentations begin at 8:00 AM* ***Register online at www.4spe.org/elearning***

Help Wanted

The Southern California section of SPE would like to assist in the unemployment problems in our Chapter's area. We offer to display help wanted notices in this news letter. This will help our membership find employment and the companies in our section to find qualified help.
Any Molding Company in this section may apply for a free add help wanted ad for plastic related employment by sending a request on the company letterhead
Send request to socalspe@la.twcbc.com
Please describe the position, Shift, qualifications, Degree (if needed), your contact information for the applicant to send resume.

We do not want request from employment agencies or head hunters.

COLLEGE OF THE EXTENDED UNIVERSITY
CAL POLY POMONA

Scientific Injection Molding (Fall 2014)

The course emphasis is on scientific approach to a somewhat complex injection molding process in order to simplify and eliminate basic misunderstanding about processing techniques employed today throughout the industry. Students will learn the importance of understanding polymer basics, material flow properties, viscosity-shear rate curve, major plastics variables in molding, decoupled molding techniques, data analysis and interpretation. The course will cover fundamental and scientific approaches to material drying, venting, cooling, use of regrind, how to prepare universal set-up sheet, cycle time optimization, tooling considerations, etc. Use of modern tools and techniques such as mold flow analysis, cavity pressure transducers, and data acquisition tools along with troubleshooting techniques will also be covered.

Course content:

- Polymer Basics, Plastics Materials and Flow Characteristics
- Part Design Fundamentals
- Overview of Basic Injection Molding Process
- Drying, Material Mixing, Coloring, Regrind Usage
- Major Process Variables
- Decoupled Molding, Universal Set Up Sheet
- Tooling Considerations, Venting, Cooling, Ejection
- Cycle Time Optimization and Troubleshooting Techniques
- Mold Flow Analysis
- Tricks to Improve Productivity
- Modern Injection Molding Operation

September 20 & 27, 2014
8:00 AM—5:00 PM
Cal Poly Pomona
Fee $375

For More information visit the Cal Poly Pomona Website
Or call the College Extended University

Www.ceu.csupomona.edu
ceuinfo@csupomona.com

877-398-8648

SOCIETY OF PLASTICS ENGINEERS MEMBERSHIP APPLICATION

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Zip/Postal Code_____ Country_____ Gender: Male _____Female_____ *Required for Student Membership

Membership Types (please check one)

_____ Full time Student $31 _____Young Professional $99 (under age 30) _____Professional $144 ($129+$15 new member initiation fee)

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.

Payment Information: PAYMENT MUST ACCOMPANY APPLICATION-NO PURCHASE ORDERS ACCEPTED

Amount_____ Check Number_____ Cash _____

Credit Card Information (Check One) American Express_____ Visa_____ MasterCard_____

Credit Card Number_____Exp. Date_____ Security Code_____

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.

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Member Groups (Choose up to 2 Member Groups included with membership. Add additional groups online for $10 each).

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Automotive - D31
Blow Molding - D30
Color & Appearance - D21
Composites - D39
Decorating & Assembly - D34
Electrical & Electronic - D24
Engineering Properties & Structure - D26
European Medical Polymers - D46
Extrusion - D22
Flexible Packaging - D44
Injection Molding - D23
Medical Plastics Technical Area of Interest - 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
European Thermoforming - D43
Thermoplastic Materials & Foams - D29
Thermoset - D28
Vinyl Plastics - D27

The SPE Press Society of Plastics Engineers - Southern California
Nicole Kanbara 909-573-2876 socalspenews@outlook.com

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Board of Directors Positions

The Southern California SPE is seeking volunteers to fill positions on its 2013-2014 Board of Directors. If you have a few hours to spare, once a month, and would like to become part of the Board email a brief bio and the position you are interested in to:
Rick Hays, SoCal Section President
714-523-8050 • rhays@ethorn.com

The Board meets for dinner or by phone once a month to plan and organize events.