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March 2015

# SPE Education Night

Education night has long been a featured event for the Southern California Section of SPE. Each year we have an essay contest for local high school seniors. They submit essays about a topic which in which plastic is featured. The winners receive a cash prize with a matching prize to the school which sponsored the student. The winner then goes on to compete in the SPE national essay contest for which the winner and the school each receive \$1000.00.

This year's ceremony will be held at Cal Poly Pomona with Professor Victor Okhuysen as Education Chair. The program will be held on March 19 at Cal Poly Pomona. There will be a dinner, and a tour through the Cal Poly Engineering facility.

In the past, we had Tina Sulser chair this committee. Tina has since retired and move to another state. During her term, prior to the recession, there was huge support from you the members for Ed Night and the event was well attended. We now find ourselves with fewer members attending to congratulate the winning students. We invite all of our members and friend to attend and recognize the hard word these students put forth in this competition. If you are unable to attend, please donate a \$25 student sponsorship.

### Presidents Message

I am excited to let our members know that Southern California Society if Plastic Engineers is making some big changes. The board has made update changes to our SoCalSpe.org website to mirror the changes National has made. The board had also decided to begin sending future news letters electronically. This change will enable us to reach out to more SPE members as well as potential SPE members. Currently only SPE members receive the mailed news letter. With the cost of printing and mailing continuing to increase we needed to find a way to reach more professionals in the plastic industry without incurring the increased cost of printing and mailing.

Please take some time to check out the website. We welcome ideas / suggestions. The SoCalSpe.org website is a living document. We will be constantly updating and adding new content.

I am excited to announce we have a new board member. Matt Dauphine of Mission Plastics has joined the SoCAI SPE board. If you are interested in learning more about our board please feel free to contact me. Our board meetings are open to SPE members in good standing.

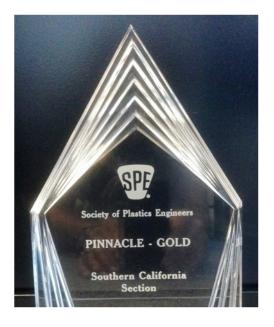


## SOUTHERN CALIFORNIA SECTION HAS BEEN AWARDED PINNACLE GOLD!

The Pinnacle program was established in 2005 to recognize Sections and Divisions that successfully create and deliver member value during year. Sections and Divisions are reviewed in four categories of achievement: organization, technical programming, membership and communication. Two levels or achievement are possible: Silver and Gold.

So. Cal Section has earned this award every single year since its inception. The hard work of the Board of Directors and the support from the section members has made this possible. Thank you for all of your support.

**SOCASPE Board of Directors** 



### January Meeting Recap





January Evening Technical meeting was held on Thursday January 22nd 2015 at Jagerhaus Restaurant in Anaheim. The topic "Valve gate Hot Runner Systems and Advances in Hot Runner technology" was HEISSKANALTECHNIK presented by Paul Boettger of Technoject Machinery Corp.

> The speaker presented the key challenges facing miniaturization of the hot runner systems. Miniaturization of hot runner nozzles is opening up new ways to cost effectively ramp up to higher cavitation without increasing mold sizes and cavity spacing, especially for thermally sensitive resins. Thermal management along the flow path of the hot runner system is vital to successfully process challenging resins with article weights in the less than 1 gram region.

Many small articles in the Medical, Electrical or Consumer molding field require edge gate type designs due to lack of suitable top gate locations. New advancements in edge gate nozzle designs address the difficulties in placing a direct gate on the side. Separate thermal control of main feed tube and edge gate unit opens up new possibilities in molding resins with narrow processing windows.

Also discussed were the needs for suitable small size actuations especially in clean room environments. While separate drive units are no longer possible with close cavity spacing systems a new breed of actuations is emerging, such as Cam Bars and Plate Activators. While pneu-

matic actuation is commonplace in cleanrooms new linear servo electric motor systems can help to maximize precision and allow variable open and close speeds.

Attendees learned about the another aspect of quality valve gate molding which includes the elimination of flow and knit lines that are sometimes present with conventional valve gate molding. The splitting of the melt flow in valve gate systems is



often the cause for weakened areas in the molded article, due to knit lines. In addition this can also lead to cosmetic problems on the surface of the article as observed on covers, lids, lenses etc... A new valve gate design called "Free Flow" addresses these problems and offers a solution by eliminating the split melt.

Lively discussion and question answer period followed the informative talk.



## SPE TECH CORNER Regrind Some Good News and Some Bad News

This is a new feature for the Newsletter. We will have a Q&A section for your questions and input. Please direct your questions to Mr, Tuan Dao TUAN DAO [tuandao@msn.com]

Any discussion involving the use of reground sprues, runners and rejected parts eventually comes to the same question: "How much regrind can be used; what percentage can be blended with virgin resin?" The question has no single answer.

Some parts are used in end-products that can tolerate 100% regrind in the shot. In other applications, where the molded parts must withstand unusual impact, bending, high stress or extremes of temperature, no regrind can be tolerated. While these parts might function equally well with carefully controlled use of regrind, failure in a critical service that could cause damage or injury certainly would not justify taking a chance or varying amount or quality of regrind used. The wiser course would be to find a less critical application for the regrind.

Between the extremes of zero regrind to significant quantities, there is a point at which the use of a controlled percentage of clean regrind will not harm part quality. Indeed it may improve the molding of some parts. Note that we used two key words to describe the regrind: controlled and clean.

By allowing the ratio of virgin resin/regrind to fluctuate, the filling of the mold can change. The cavity pressure and even the melt temperature may vary because resin viscosity can change with changes in the blend. A constant blend percentage helps to maintain dimensional tolerances, impact strength, and part appearance. This is especially true in multicavity molds which may fill differently if flow rate changes.

### Keep it Clean!

Clearly, the regrind must be clean and free of "foreign" matter (no candy wrappers!). It also must be free of lubricating oil, brown streaks or spots of degraded resin, dust or pellets of other resins from

regrind cutters, drying ovens or hopper dryers, excessive "fines" or "longs", etc. A good principle is this: If it is not clean enough or free enough from contamination to pack for shipment, it isn't clean enough to put in the regrind cutter. By putting a contaminated part or runner back in the regrind, many more parts will be contaminated.

Assume for the moment that the regrind is of good quality and the proportion of regrind to virgin resin is kept under control. Then how much regrind can be used when the end-user will permit addition of regrind? The common practice is to use about 25% regrind. A heavier runner will naturally produce a higher percentage of regrind and the use of higher regrind ratio may cause problems, because a significant portion of resin in each shot will have been through the machine several times. For hygroscopic material like toughened nylon, even a regrind ratio of 50/50 may harm part toughness if the resin is not properly dried or if the machine cylinder is too big for the shot size, making for long hold-up time.

### Watch That Toughness

The regrind ratio is important where toughness is needed, especially with hygroscopic resins. When molding glass reinforced nylon, the regrind ratio must be watched with particular care. That because the toughening that provides impact strength is related to the length of the glass fibers. Each time the fibers go through the machine and the runners are reground, some of the glass fibers are broken into shorter lengths. End-use testing may show that the regrind percentage must be low if impact toughness is to be maintained.

In summary, the allowable percentage of regrind can best be determined by testing parts molded with various regrind ratios in the expected service. If parts fail on test at any regrind ratio, a conservative approach must be taken to allow for margin of error in normal production.





### **PROGRAM MANAGER**

MPI is currently searching for a Program Manager, preferably with experience in the injection molding field. Interested applicants should contact :

Michael T. Kelly, Director of Operations Mission Plastics, Inc., 1930 S. Parco Ave. Ontario, CA. 91761 909.947.7287 x323, 909.821.4084 Cell www.missionplastics.com

#### Senior Mold Maker

Highly motivated, detail oriented with diversified experience in Mold Making, R & D in support of manufacturing & engineering of new & old molds & of production processes. Excellent at troubleshooting, analyzing, fabrication, research and the ability to come up with new ideas. Self- reliant professional with high standards with over 25 years of experience with major healthcare corporations, works extremely well with little or no supervision. Please e-mail me with any questions! garth.miller@att.net

vHelp Wanted-

lower level process tech to work out of Harbor City location. Full time must be flexible on the shifts Chris M. Mitchell, Engineer Manager Judco Manufacturing Inc. 1429 W. 240th St, Harbor City, CA 90710

310-534-0959 - Voice, 310-534-9420 - Fax www.judco.net



## SPE People Watch

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

Skip Humphrey intl.plasticsequip@verizon.net has been appointed as the west coast representative for Thorson Mccosh for your molding auxiliary needs.

Pat Dauphine has turned over the reins at Mission Plastic. He will still maintain an office "for G jobs" and can be found at Mission a few days a week. You can't keep a good man home.

Chris Mitchell has joined Judco Manufacturing Inc. in Harbor City. He will be down by da beach cooling his heels.

Mike Kelly has joined Mission Plastics as Director of Production. May the gods be good to him.





does not remain in the cylinder. Makes

- changeovers FAST and SIMPLE eliminates burnt residue
- · can be used with a wide variety of resins
- economical--small amount goes a long way



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