

Fall 2018 | No. 108

## Chair's Message

Srikanth Pilla



Dear SPE Injection Molding Community:

I hope you are enjoying the wonderful fall weather before winter kicks in. We are pleased to bring to you the fall edition of our newsletter which covers wide range of topics including ultrasonic welding, non-matching mesh technology, vent temperature sensors. Injection Molding Division (IMD) always strives to provide services and solutions to its community. We hope that these topics will invigorate your interest and knowledge in injection molding technology. We intend to bring more such topics, primarily targeting at the ones that are of interest to the industry members while motivate academicians.

IMD also aims to motivate and inspire the next generation cohort of engineers, especially embracing them within our community. To enable such, we instituted a new award aka, Outstanding Young Injection Molding Engineer award. The award is instituted to recognize young engineers, age 35 or younger, who have made exceptional contributions and accomplishments in the molding industry. The deadline is fast approaching, please nominate (or self-nominate) a deserving colleague of yours.

I would like to congratulate our fellow board members, Lynzie Nebel and Angela Rodenburgh for their outstanding accomplishments and to Kyle Ploucharczyk for his well deserved IM Division scholarship. Finally, I would also like to extend my sincere thanks to all the sponsors, the board members and the community. As always, we look forward to providing increased value to your IMD membership while also fulfilling our core mission and service.

Sincerely,

Srikanth Pilla  
2018-2019 IMD Chair  
Clemson University  
spilla@clemson.edu

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## Industry Events/Webinar Calendar

Click the show links for more information on these events!

### FEBRUARY 2019

#### FEBRUARY 19

2019 SPE Thermoset Conference  
Charleston, SC

#### FEBRUARY 24

SPE International Polyolefins Conference  
Houston, Texas

### MARCH 2019

#### MARCH 18

ANTEC® Detroit  
Detroit, MI

#### MARCH 11

Extrusion Event, After-Market Suppliers  
Akron, Ohio

#### MARCH 19 - 21

Molding 2019  
Indianapolis, IN

### WEBINARS

#### DECEMBER 6, 2018 10:00 AM (EST)

Thermal Analysis in Failure and Compositional Analysis

#### DECEMBER 13, 1:00 PM - 2:00 PM (EST)

Materials for Medical Applications

#### JANUARY 30, 2019 12:00 PM - 1:00 PM (EST)

'What's your salary requirement?' Then, how do you know you'll make enough?!

#### FEBRUARY 14, 2019 11:00 AM - 12:00 PM (EST)

Creep Failure of Plastics

#### FEBRUARY 27, 2019 11:00 AM - 12:00 PM (EST)

Conversations That Matter: Managing Accountability in Others

### ON-DEMAND WEBINARS

#### How to Use Simulation to Reduce Material and Part Cost

Producing plastics parts in today's global competitive market is not easy. Engineers and designers face demanding requirements for quality, cost and time to market. One way injection molding professionals are addressing these demands is through the integration of simulation software.

#### 10 Easy Ways to Analyze Your Plastic Parts

#### MIM Solutions: Materials

Learn more about the materials behind the metal injection molding process. Discover different material options as well as the science that goes into modifying custom alloys to accentuate the complex metal injection molding process.



## Congratulations to our Board Members Lynzie Nebel and Angela Rodenburgh



The Injection Molding Division is proud to announce the accomplishments of fellow board members, **Lynzie Nebel**, Vice President Young Professionals at Society of Plastics Engineers, and **Angela Rodenburgh**, President of Ladder Up.

Lynzie has been honored with this years Plastics News 2018 Rising Star award.

Angela Rodenburgh has been honored with the “Woman Breaking the Mold” award.

Congratulations to both for truly deserving honor among women professionals in the industry.



# Join Us



## ANTEC® 2019

Detroit, MI • March 18-21, 2019  
CO-HOSTED BY SPE DETROIT

### Today's Ideas at ANTEC® are Tomorrow's Innovations in Plastics

ANTEC® 2019, produced by SPE-Inspiring Plastics Professionals, is the largest, most respected and well-known technical conference in the plastics industry. It's where classroom theory connects with real world solutions.

#### Why should you attend?

This year, ANTEC® 2019 has been reformatted into two programs INSPIRE and INSIGHT to best represent the ideas and trends shaping our plastics industry.

#### ANTEC® 2019 INSPIRES

550+ technical and business papers and 60+ marketing presentations, spanning Monday thru Wednesday midday, you will be able to enjoy the traditional ANTEC® that you know and love -complete with networking and student events and exhibitor receptions.

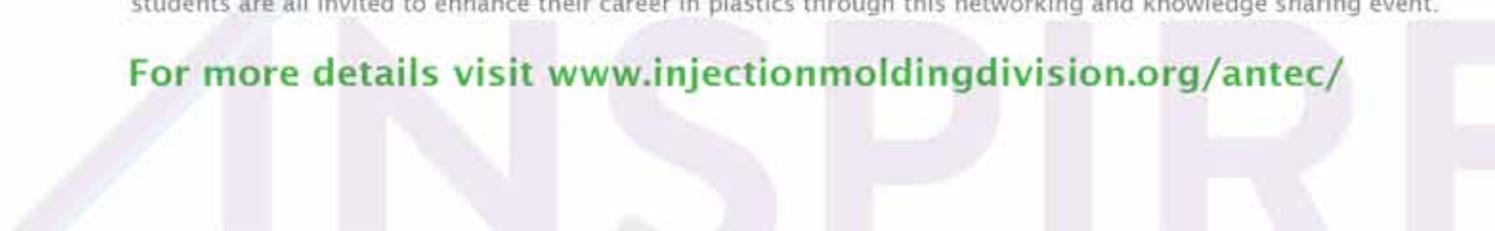
#### ANTEC® 2019 INSIGHTS

Running from Wednesday midday and all-day Thursday with megatrend sessions on Packaging, Building & Construction, Sustainability and Transportation you will get face-to-face interaction with expert representatives from the largest industry segments. INSIGHTS will focus on the big picture -and the biggest questions being asked in the plastics community today.

#### Who Should Attend?

SPE is comprised of 22,500+ members, all from diverse backgrounds and careers - ANTEC® is no different. Managers, engineers, R&D scientists, technicians, sales & marketing associates, executives, academics and students are all invited to enhance their career in plastics through this networking and knowledge sharing event.

For more details visit [www.injectionmoldingdivision.org/antec/](http://www.injectionmoldingdivision.org/antec/)



# SPE President Elect Candidate

## Jeremy Dworshak is Running for SPE President



### Why do I want to run for SPE President?

I am excited about the strategic vision of SPE, Inspiring Plastics Professionals, and am wanting to help promote and advance this vision as a volunteer leader of the society.

My involvement with SPE came as a young professional, age 23, where I needed to learn about a plastic process I was not very familiar.

Through SPE, I was able to take a week long course and learn technical information that was valuable to my employer and my career.

As I continued on with an advanced degree, the SPE Foundation awarded me a scholarship. SPE's generosity to my young career inspired me to 'give back' to the society with my time and talents. I'm very happy to have been introduced to SPE; as it has given me knowledge, know-how, and life-long friends.

I'm a dad, husband, avid marathon runner, community and professional volunteer.

In my life and career, I've aspired to help create a sense of goal seeking, value, and comradery in each setting I'm fortunate enough to be a part of.

Within SPE, I've had the opportunity to serve as the society's treasurer the past 2-1/2 years. This experience gave me additional exposure to the inner workings of SPE and how we manage all financial aspects of the society. I will use this experience to help guide my vision as president.

### My vision as SPE's president is taking shape in three (3) main areas:

#### 1. Improving the relationship amongst all SPE volunteers.

Let's develop 'welcoming' events for new leaders to encourage and promote comradery. Improvement, in this way, should help to ensure that our individual voices are heard, understood, and appreciated.

#### 2. Focus on membership development and growth.

Together, let's build on what has already been implemented; like the online membership directory and renewal forms. I'll help by working with staff to focus resources on the advancement of programs to attract and retain members.

#### 3. Succession planning and future leadership.

How can we all help to ensure SPE's future success? Let's put a plan in place to help identify and grow future leaders. Let's open the door to all plastic professionals to become engaged, volunteer, and help inspire all of us at SPE.

It would truly be an honor to serve as your president. Together, we can accomplish this vision in continuing to strengthen SPE.

*Jeremy K Dworshak*



# Injection Molding Division Scholarship 2018 Report

## 2018 Scholarship Recipient

Recipient: Kyle Ploucharczyk, UMass-Lowell  
Program of Study Scholarship: Plastics Engineering  
Amount: \$2,750



Hello, my name is Kyle Plocharczyk and I am entering my first year of graduate school at the University of Massachusetts Lowell. I most recently received a B.S. in Plastics Engineering from UMass Lowell and will be continuing the same pathway for my M.S. Growing up, I had always known that I wanted to pursue a career involving math and science, but it was only until visiting UMass Lowell and speaking to Prof. Malloy and Prof. Johnston that I felt like plastics engineering was the right fit for me. I am greatly honored to be receiving the SPE Injection Molding Division Scholarship which will help me greatly in finishing my college career. Thank you to everyone who has helped me through this process.

## Recent Injection Molding Division Scholarship Recipients

### • 2017:

- Max Zamzow, University of Wisconsin-Stout, Plastics Engineering  
Total Awarded: \$3,000

### • 2016:

- Sebastian Goris, University of Wisconsin-Madison, doctoral student and graduate research assistant  
Total Awarded: \$3,000

# Tips for Ultrasonic Welding

## Preface

Ultrasonic welding involves converting high-frequency electrical energy (generally 15-40 kHz) to high frequency mechanical energy in the form of reciprocating vertical motion. The welding tool, the horn, delivers pressure and high-frequency vibrational energy to the joint interface. The point under highest stress melts and flows across the interface of the mating parts, bonding the two surfaces.

With ultrasonic welding there are many requirements that must be met to be successful. The finished part as well as the joint, the weldability of the material, alignment and support of the parts, and horn placement are all important factors. While all of these things play a major role in successful welding, design is probably the most crucial. In designing for ultrasonic welding, the first consideration must be the specifications of the part. These requirements include:

- The load bearing strength of the seam.
- Whether or not it must be a hermetic seal.
- Cosmetic appearance.
- Minimization of plastic waste.
- Preventing migration of plastic fragments to the interior of the part.

These factors will dictate the design of the joint, the fit tolerances, and the position of the ultrasonic horn.

## Designing the Part

There are many possible joint designs and variations which are used in ultrasonic assembly. The most widely used are the energy director, the shear joint and the tongue and groove joint. An important point with joint design is reproducibility. A properly designed considerations are:

- The initial contact area between the mating surfaces should be small to concentrate and decrease the total energy time needed to start and complete melting.
- A means for aligning the mating parts should be provided
- Mating surfaces around the entire joint interface should be uniform and in intimate contact with each other

## Tips for Ultrasonic Welding

Three crucial elements of successful welding are:

- The part and joint design.
- Welding equipment.
- The “nest” or fixture that holds the parts to be welded.

### Material Factors

Factors such as the molecular structure, melt temperature, modulus of elasticity and chemical makeup will affect the weldability of the material. Amorphous resins are characterized by a random molecular structure and the tendency to melt and recrystallize gradually. Amorphous materials are efficient at transmitting ultrasonic vibrations and can be welded with many force/amplitude combinations. The height of the energy director should be 50% of the width of the base.

Crystalline materials have an orderly molecular structure and a sharp melting and resolidification point. These materials do not transmit vibrational energy as well and usually require a higher amplitude (greater energy input) to reach a melt point. The height is over 60% the energy director could bend under pressure. The width of the ase for both amorphous and crystalline materials should be 20% to 25% of the total joint wall thickness.



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## Tips for Ultrasonic Welding

### Butt Joints

The butt joint is one of the simplest joint designs. By adding an “energy director”, excellent results can be seen. The energy director is a raised triangular ridge of material molded on one of the joint surfaces. The energy director will be the first spot to start melting because it is under the greatest stress. The size and angle of the energy director is usually dictated by the type of material.

### Tongue and Groove Joints

The tongue and groove joint is considered to be much stronger than the butt joint because the melt is enclosed, increasing strength and reproducibility. It is also self-aligning and visually perfect. Here again, the depth and width of the groove is slightly greater than the impinging tongue so that the melt is captured within the joint. The downside of the design is that the close tolerances make parts harder to mold and large wall thickness are required.

### Shear Joints

The shear joint is best when welding crystalline materials which have a sharp and narrow melting point. Energy directors are not used for crystalline because melting and re-solidification can occur so quickly that fusion of the joint surfaces is not achieved. Because of the small contact areas the surfaces begin to melt the parts telescoping them together and continue along the vertical walls. The molten interface never comes in contact with the surrounding air, and yields a strong structural seal. The vertical dimension of the joint can be adjusted for the part. The shear joint requires the following:

- Rigid side wall support to prevent deflection during welding
- The walls of the bottom section must be supported at the joint by the holding fixture.
- The top part should be able to withstand internal deflection.
- The top part should be as shallow as possible.
- The design should allow for a clearance fit.
- A minimum lead-in should be incorporated.

Shear joints and crystalline materials require more energy. This means the weld time must be 4 times longer or input power must be greater than 2,000 watts with high amplitude output. Shear joints work extremely well for cylindrical parts.

### Weldability Factors

Weldability depends on the compatibility of the materials. Crystalline materials can only be welded to themselves. Amorphous materials are limited when bonding to other amorphous resins and blends. Other factors include:

- The melt temperature must be within 30-40°F, for all like resins.
- For best results, resins of the same grade should be used.
- Moisture will have an adverse effect on the quality of the weld. Hygroscopic resins may absorb moisture from the air and start to bubble at the joint surface during welding, affecting bond strength and appearance. Parts should be kept in a polyethylene bag.

## Tips for Ultrasonic Welding

- Fillers can increase the weldability of thermoplastics to a point.
- Mold release agents can affect the heat generation at the part interface during welding.
- Lubricants weaken the weld by reducing the intermolecular friction.
- Plasticizers can interfere with the resin's ability to transmit the vibratory energy.
- Pigments' particularly oil-based colorants can adversely affect the welding process.
- Design flaws or loose tolerances can result in dimensional and weight fluctuations, surface defects and material stress and poor welding.

## Other Considerations

- The location of the joint and its position relative to the surface of horn contact is critical.
- Joints less than 0.25" from the horn are near field and, joints more than 0.25" are far-field.
- Crystalline materials don't transmit vibration energy well, they should be welded near-field.
- Far-field welding is not recommended for amorphous resins especially with distances greater than 0.25"
- Horn-to-part contact area should be larger than the total weld area.
- Design the part so that the energy travel is the same distance through the material to get from the horn to the joint.

## Conclusion

Any success of ultrasonic welding will only be as good as the part design, type joint and equipment used. Prototyping and testing consistency are very instrumental when proving any given application. It is relatively inexpensive to build prototype tools to prove the design. As we know, prototype tools can be altered fairly easy which in turn favors joint design and part function. One should get a good statistical sample with long prototype runs. Consistent testing is important because even if the weld looks perfect and you can't pull it apart it must still perform out in the field. Take advantage of technical resources such as ultrasonic equipment suppliers. They are ready, willing and able to offer help in part and joint design.



*Dallas Cada is a highly trained plastics engineer with over 20 years of sales support experience. Owner of a plastic consulting business (DDC Consulting), his experience includes technical service, application development, market engineering, injection molding, design, tooling, material suggestions and problem solving for plastic manufacturing companies.*

*For more information with troubleshooting plastic problems or helping with new plastic applications, contact Dallas Cada by e-mail at [dallascada@charter.net](mailto:dallascada@charter.net). Contact Dallas by phone (507) 458-5785 or (507) 452-1584.*

By Rey Parel  
SPE Golden Gate Section

# Vent Temp Sensor Profile of Machine Melt to Mold Part Eject Cycle

Mold close melt inject volume to open part eject thermal profile is now know for each molding cycle. A mold eject side vent sensor profiled melt volume inject rate to final eject state. The "instant" thermal rise from convected heat released with the "crack" of mold opening is sensed. Than part melt heat conducts to the mold vent sensor with mold opening time. The vent sensor shows the differential thermal expansion of the mold and curing part. The vent sensor heat drop occurs with part ejection. This mold vent sensor thermal readout consecutive molding cycle will be presented.

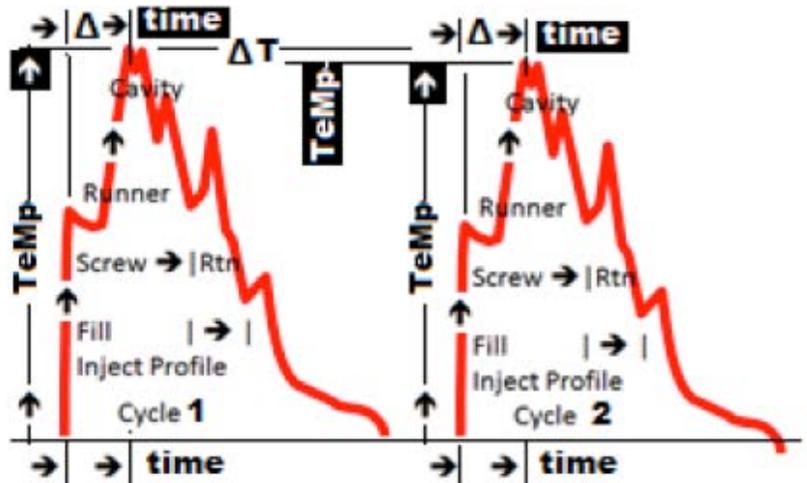


Figure 1



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Steve Kieffer, Termax LLC

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Vent Temp Sensor Profile of Machine Melt to Mold Part Eject Cycle

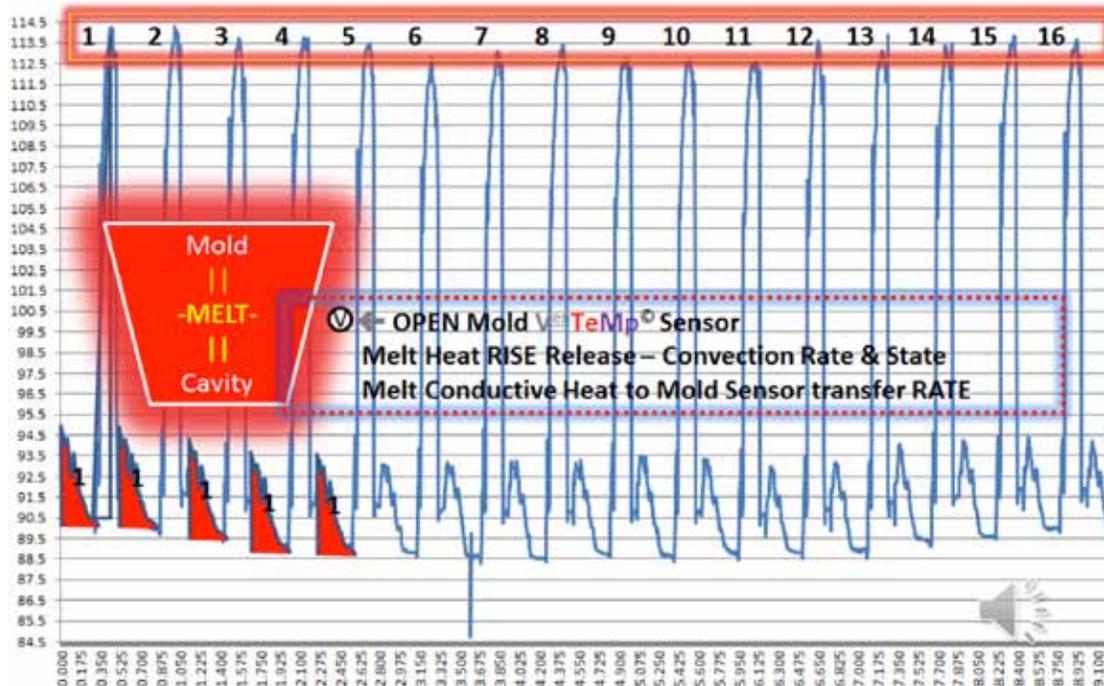


Figure 2

Injection Cycle Background

The mold vent sensor profiles the melt injection fill to pack and hold cycle time. Screw return melt recovery time is an added vent sensor response to machine mold clamp force. The vent sensor thermal drop continues to cure mold opening time. The mold conduction to melt differential rate sets the in-cavity part shrink rate until mold ejection site and dimension ambient state is reached.

The machine melt to mold injected volume profile shown in **Figure 1**.

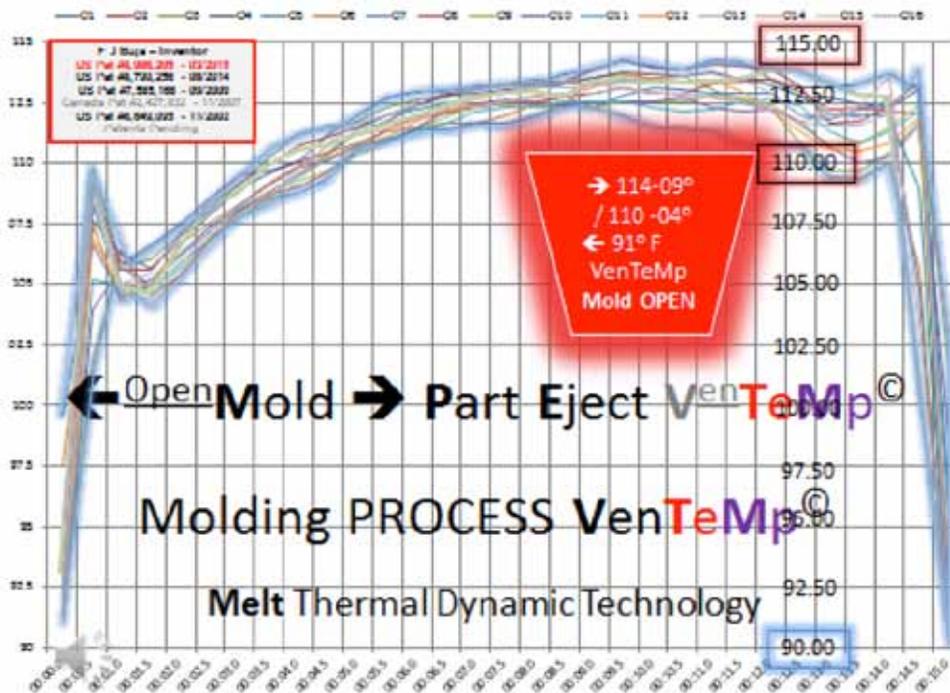
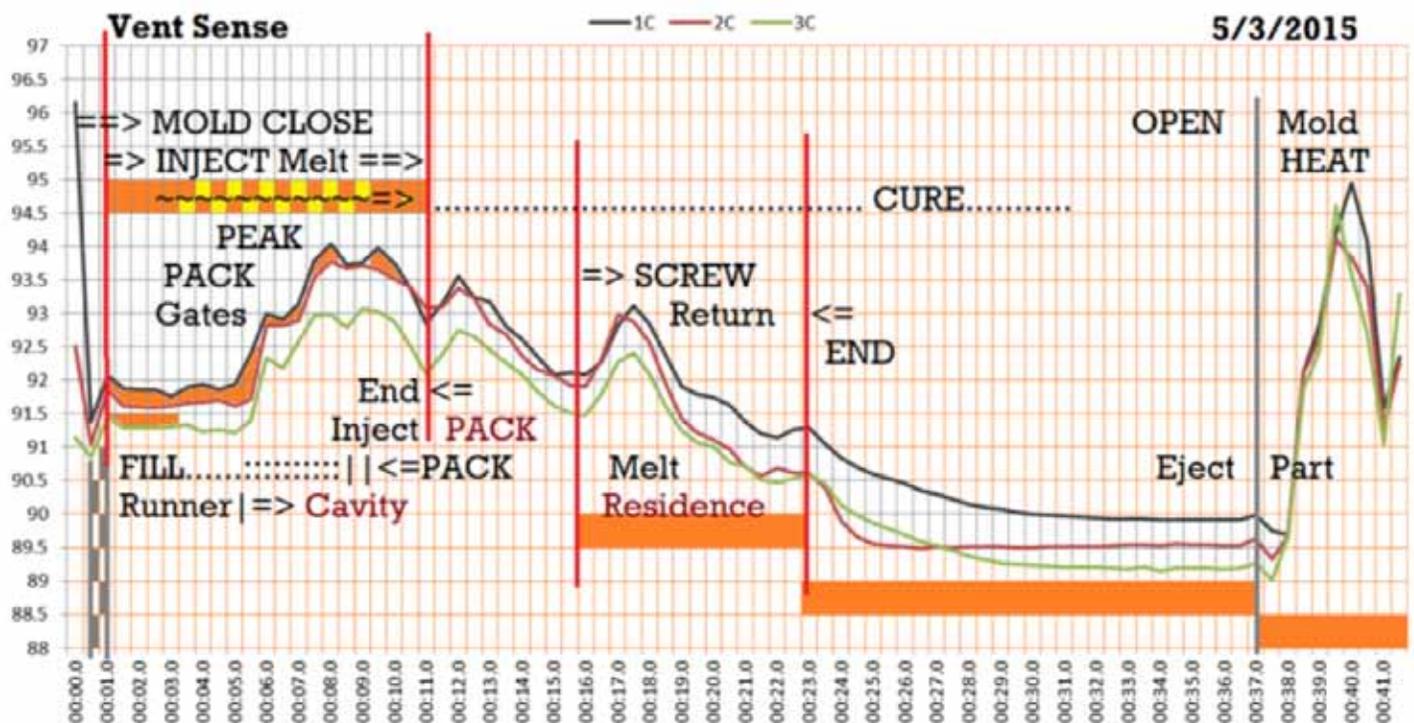


Figure 3

## Molding Cycle Vent Profile

A mold vent sensor cyclic melt inject “rise” and following drops during mold fill-pack and cure time occurs. Mold open to back position shows a sequence of rises with short temperature drops. Peak temperature rise and following drop occurs with part ejection. The cyclic mold close to open molding cycle is shown in **Figure 2**.

The vent temperature “rise” combines mold cavity melt dispersing by convection during initial mold part line opening. And mold conduction of residual heat to the vent sensor during return time.



**Figure 4**

## Mold Part Heat Vent Profile

The cavity vent sensor has sharp temperature “rise” with mold opening. The molded part heat escapes by convection to the sensor. As the mold moves back to eject position a rise to a maximum temperature is seen. When the part is ejected the sensor drops until mold close.

The induced melt residence heat is conducted through the mold steel and will vary with external site and mold temperature system. The small variance shown in **Figure 3** from mold opening part ejection to close is very small range.

## Mold Close Melt Vent Sense

The mold close cavity melt inject vent sensor for three consecutive cycles shown in **Figure 4**. The machine melt inject fill to pack injection end profile time is shown.

Vent Temp Sensor Profile of Machine Melt to Mold Part Eject Cycle

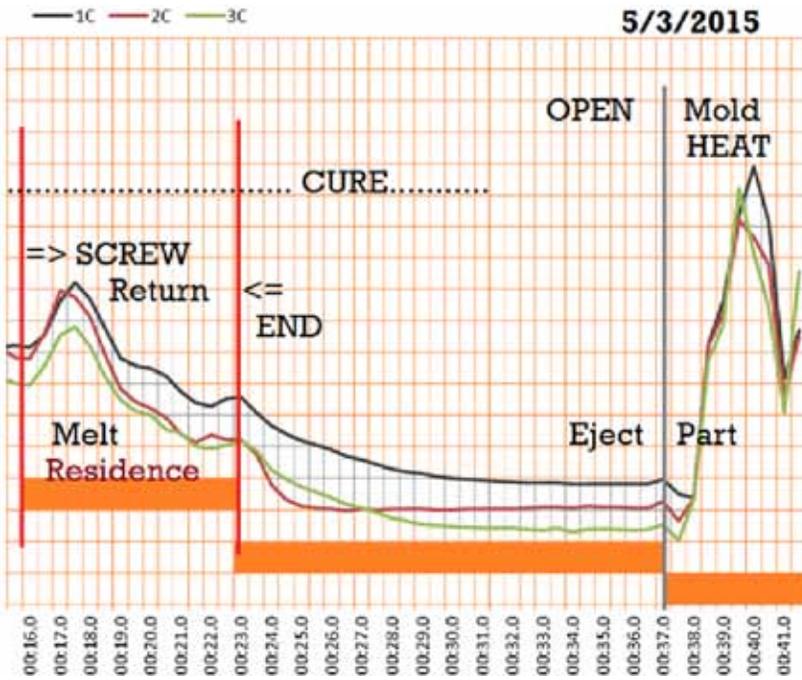


Figure 5

Screw Return Vent Profile

A time of screw return “start” initiates a “rise” in molded part internal melt pressure. A decrease in melt pressure continues until screw return time ends as shown in **Figure 5**.

Observation

The vent sensor profiles exiting trapped gas during mold close and melt inject volume time of molding cycle. The screw return shot size and residence time to the next inject cycle is known.

Mold open “instant” is known by the vent sensor temperature rise. This melt heat released is machine clamp release and the mold cracking open. The vent sensor relates the released molded part convection and conductive heat retained while in the mold cavity (see **Figure 6**).

Conclusions

The vent sensor process cycles profile of a single cavity seat mold with a direct hot runner. A 1200 Ton molding machine ran the large mold. The vent sensor side placement and sensitivity of melt front gas to pack and cure is extremely sensitive. Vent sense process to product capability achieved by placement in the mold eject side vent groove.

The machine melt to mold cavity injected volume is important. The screw return pellet to melt plasticating is indicated. And mold opening to part ejection is thermally profiled. With mold opening the molded part heat is released by convection.

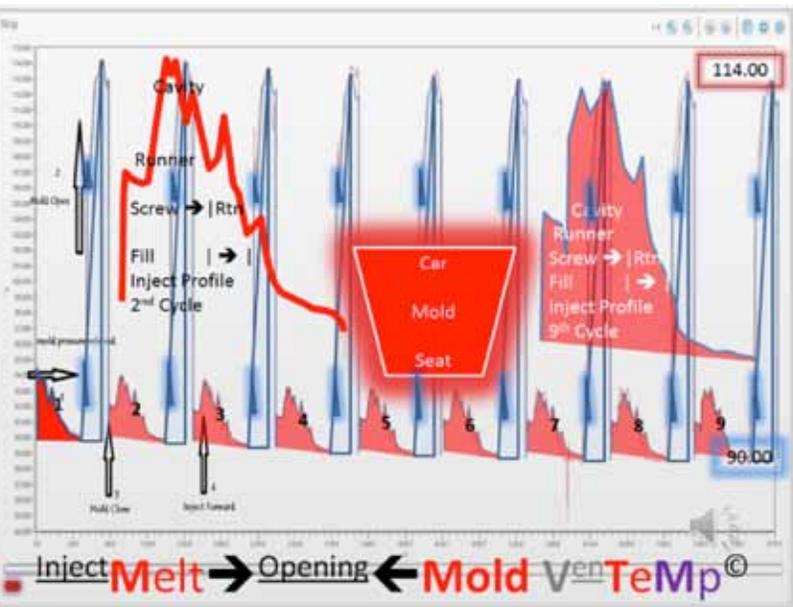


Figure 6

The conductive heat of injected melt to mold open and part ejection is thermally precise timing.

Mold cavity melt vent sensor profile is a simple means to define and refine any machine melt to molded part cycle.

<sup>1</sup> Buja, Using Vent Temperature To Sense Mold Cavity Melt Flow, SPE ANTEC Proceedings, (2006). Mold Maker & Mold Design Paper #120909

By Moldex3D

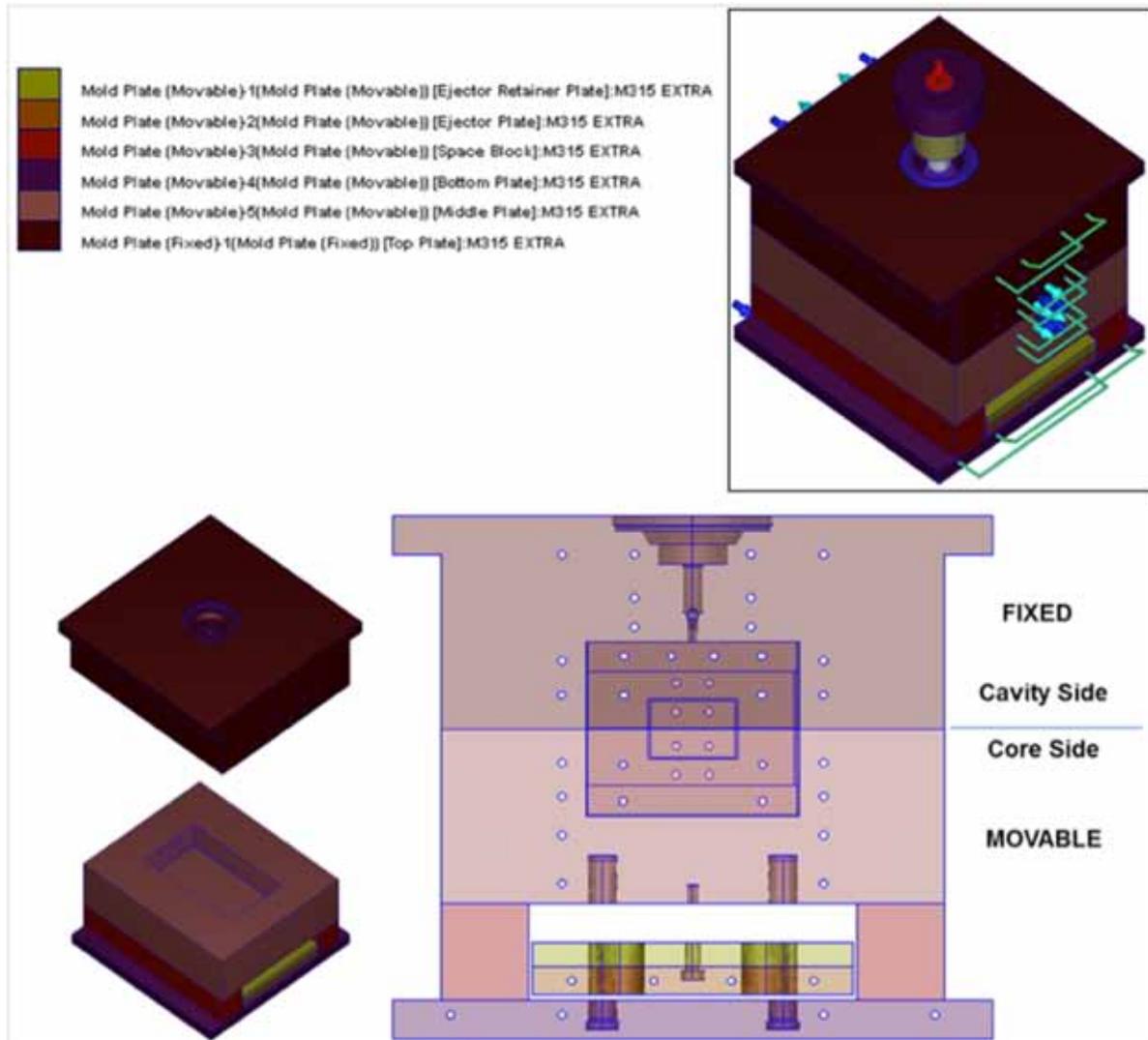
# Non-matching Mesh Technology Now Supports Complete Mold

The evolution of plastics molding simulation technology began from the plastics filling simulation, and then extended to runner, gate and cooling system simulation. Next, the effects of inserts and even the whole mold-base were also considered in the simulation. In today's highly competitive market, the demand of true mold simulation is getting higher, since the quality of moldbase design can highly affect the product yield rate, for example, the cooling system layout. If the temperature distribution on the mold plate is not uniform, mold deformation might occur and cause flash. Thus, the yield rate will decrease. Take air trap issue as another example. Plastics filling simulation can predict the possible air trap locations. With appropriate mold designs including parting lines, parting surfaces, ejectors and slides put near the possible air trap locations, there will be good venting space to prevent air traps and burn marks as well.

Advanced users need very detailed analysis results, so the comprehensive mold mesh is necessary. However, it costs experienced users significant time and efforts in mesh building in order to create matching solid mesh among every component. As the result, there were very few successful cases of true mold analysis.

In simulation analysis process, Moldex3D Pre-processor allows users to import the geometry model of an entire mold, and build detailed mesh elements for every mold component. Moldex3D R14.0 starts supporting continuous simulation of the non-matching mesh between the part and part insert. It enables users to save time and efforts in matching the mesh. Moldex3D R15.0 extends non-matching mesh simulation capability to the solid mesh generation among the part, part insert and moldbase. In the latest version, Moldex3D R16, non-matching mesh simulation further includes the mold insert, as well as the new mold plate attributes including fixed and movable mold plates. Through the non-matching mesh technology, the solid mesh of the complete mold system can then be automatically generated.

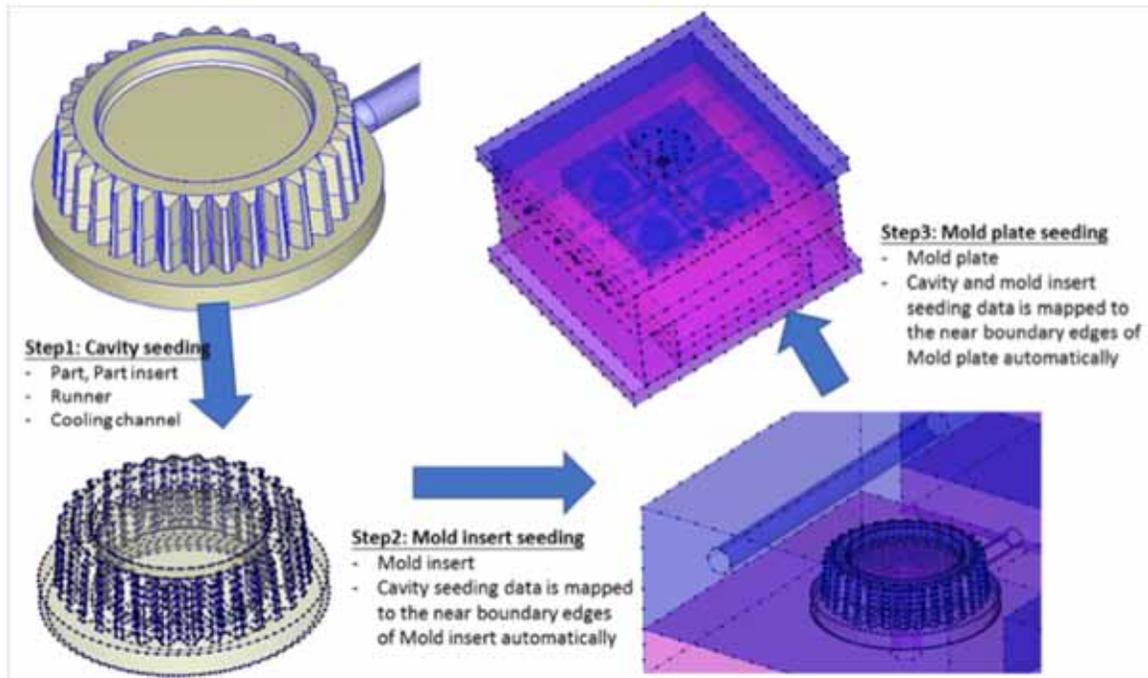




**Figure 1: The settings of complete mold and mold plate attributes.**

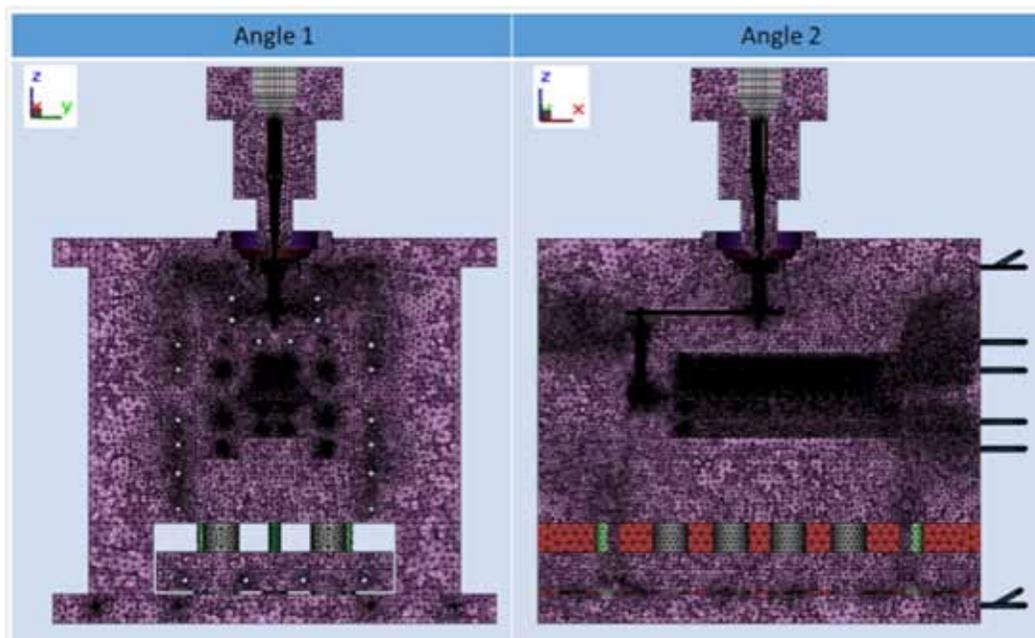
A case of utilizing non-matching mesh in simulating a complete mold system is interpreted below.

1. Simplifying the complete mold model: Mold designs usually include many tiny components, which have very little effect on mold simulation analysis. Thus, in order to reduce mesh elements and analysis time, users can simplify the model by removing the screws or filling the screw holes in the CAD models first.
2. Import the simplified model to Moldex3D Designer BLM and set attributes: Set the attributes of the part, runner, cooling channels and mold inserts respectively, and utilize the new mold plate attributes to set the fixed and movable mold plates. It can show or hide the items with set attributes (**Figure 1**).
3. Node seeding: Set node seeding from the cavity, mold insert to mold plate. The new node seeding capability can automatically bring the node seeding data of the cavity or mold insert edges to the adjacent edges of the mold insert and mold plate. This function enhances the node seeding efficiency of complete mold with multiple components, and reduces size gaps of the node seeding density between the adjacent components (**Figure 2**).

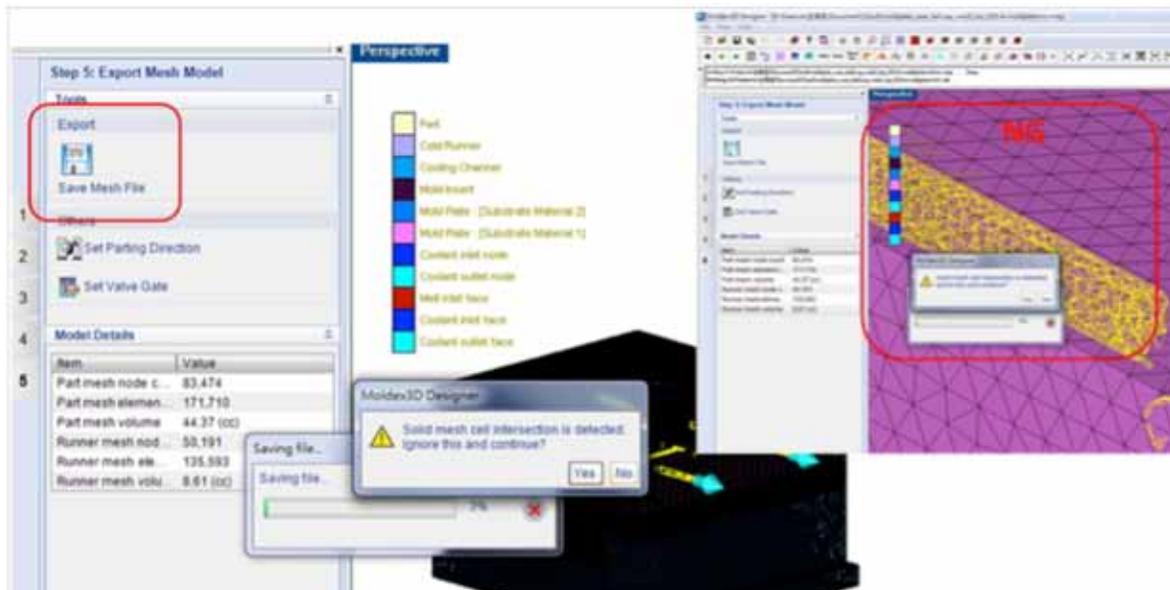


**Figure 2: The three-step node seeding data will be brought to the analysis of the next item.**

4. Build solid mesh: Click the button for generating solid mesh, and the solid mesh of the complete mold model will be automatically generated.
5. Export MFE file: The software will automatically check the mesh model before saving it into the file. Warning will pop out if mesh cell intersections detected although Non-matching mesh technology allows small amount of mesh cell intersections. When the intersection amount is too large, there might be such issue as the non-hollowed tunnels, which has to be modified to prevent analysis problems (**Figure 4**).



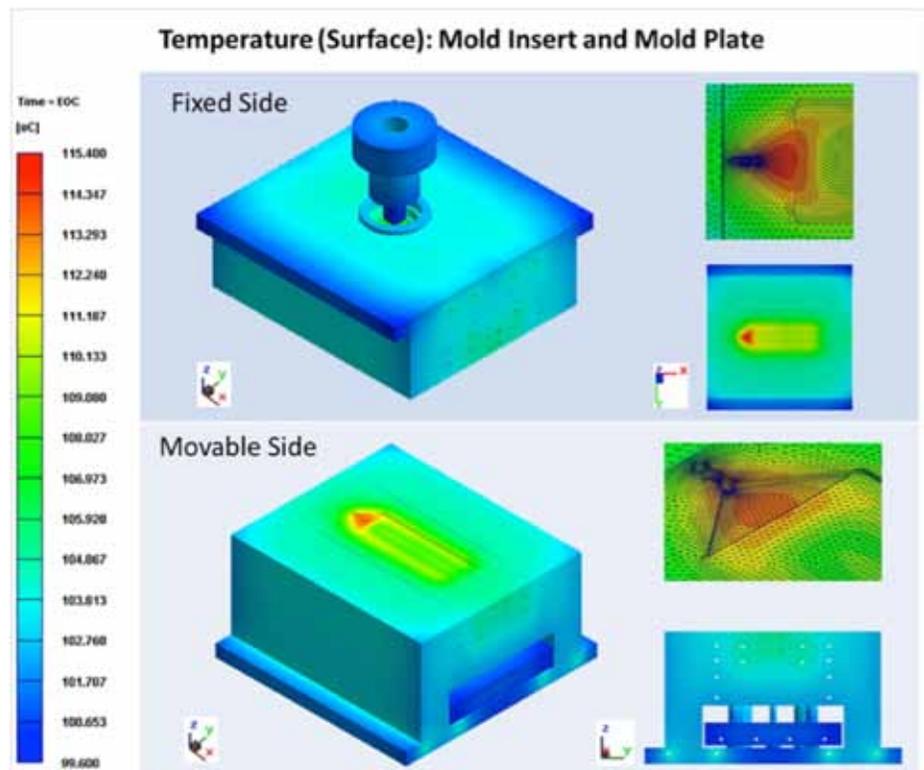
**Figure 3: The solid mesh section of the complete mold model.**



**Figure 4: Mesh cell intersection check before mesh export.**

6. Mold filling analysis: The part material in this case is PC, and the mold plate material is M315 EXTRA. The default melt temperature and mold temperature are 290 °C and 105 °C. By observing the mold temperature of the fixed and movable mold plates, we can find good temperature continuity of the non-matching mesh model. Heat can be delivered between different mold plates (**Figure 5**).

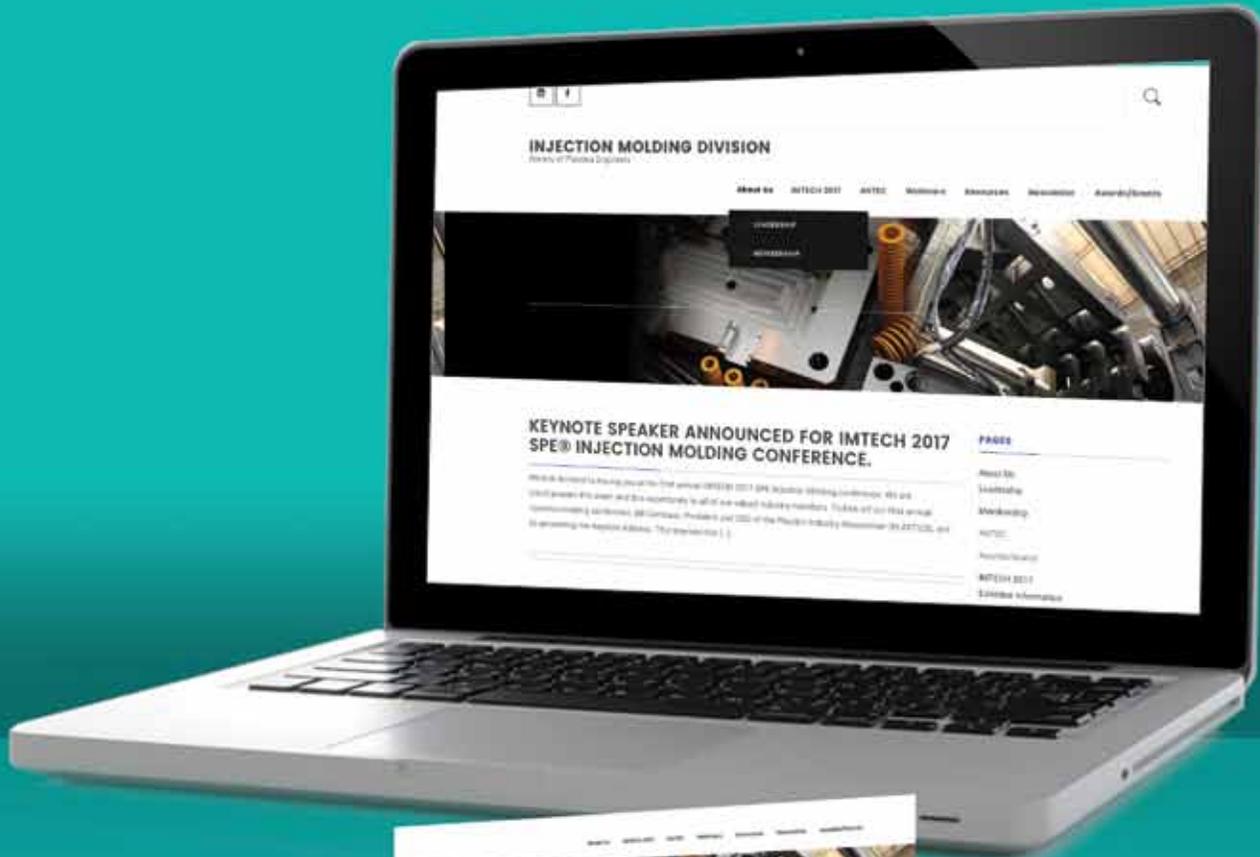
The complete mold analysis in Moldex3D R16 considers the true mold design data of the complete mold model analysis. The new mold plate attribute function enables users to set attributes of fixed and movable plates, and the advanced non-matching mesh technology facilitates rapid solid mesh generation of the complete mold system. The comprehensive mold analysis results provide customers more required simulation data for mold design. Thus, they are able to reduce mold trial times, efficiently speed up mold development, and enhance product yield rate.



**Figure 5: The temperature distribution of the mold inserts and mold plates.**

# Injection Molding Division Website [injectionmoldingdivision.org](http://injectionmoldingdivision.org)

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# Newsletter Sponsorship

## MOLDING VIEWS



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## IMD Board of Directors Meeting

**October 10, 2018**  
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*Submitted by Joseph Lawrence*

### **Welcome & Opening Remarks – Srikanth Pilla, Injection Molding Division Chair**

Division Chair Srikanth Pilla called the meeting to order at 9:05 AM (Eastern Daylight Time, EDT) and welcomed all attendees to the Fall IMD Board of Directors Meeting. Secretary Joseph Lawrence called roll at 9:06 AM (EDT).

### **Roll Call – Joseph Lawrence, Secretary**

#### **Present via WebEx & MML/Teleconference:**

Jeremy Dworshak (Executive Committee VP), Brad Johnson, Pete Grelle (Technical Director), Adam Kramschuster, Joseph Lawrence (Secretary), Kishor Mehta, Lynzie Nebel, Sriraj Patel, Srikanth Pilla (Division Chair), Rick Puglielli (ANTEC 2018 TPC), Chad Ulven, Jon Ratzlaff and Angela Rodenburgh.

**The participation of the official IMD Board Members constituted a quorum.**

#### **Absent were:**

Vikram Bhargava, Jack Dispenza, Alex Beaumont, David Kusuma, Erik Foltz, Nick Fountas, Ray McKee, Susan Montgomery (Councilor), David Okonski, Hoa Pham, Tom Turng, Mal Murthy, Edwin Tam, Larry Cosma, Jim Peret, Larry Schmidt and Jim Wenskus (Treasurer)

#### **Approval of the May 6th, 2018 Meeting Minutes**

The meeting minutes from the ANTEC 2018 Board Meeting were presented. Hoa Pham suggested a change in a statement on the Nominations Committee Report via email. It was suggested to modify the statement “It was discussed that the entire board members did not vote” to “It was discussed that the majority of the board members did not vote”.

**Motion:** Pete Grelle made a motion to approve the meeting minutes with changes, Kishor Mehta seconded, and the motion passed at 9:10 AM (EDT).

### **Technical Director Report/TPC update – Pete Grelle, Technical Director**

Technical Director Pete Grelle presented an update on ANTEC 2019 to be held in Detroit, MI. SPE estimates that IMD will require six sessions for a total of 45 paper presentations. He also presented the advanced deadlines due to the ANTEC 2019 being moved to March instead of May. The papers review deadline is November 14, 2018. IMD was expecting 40 papers based on previous contacts. The paper review committee will comprise of Pete Grelle, David Okonski, David Kusuma, Rick Puglielli and Joe Lawrence. The review of papers is scheduled for October 29, 2018 at the Marriott in Troy, MI.

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Pete Grelle also presented the TOPCON updates and the cancellation of 2018 IMTECH. The IMTECH 2018 conference was cancelled on 8/6/2018 due to the lack of sponsors. David Okonski informed the IMD chair that he will excuse himself from any active role on future IMTECH conferences. Susan Montgomery expressed her willingness to step in as chair of IMTECH with support from other board members. The board members discussed the cost structure and visibility of IMTECH and several ideas were provided by various board members. Having at a University venue was discussed as an option to save costs.

The following motion was proposed "The IMTECH chair will put together a team to govern the IMTECH conference and propose to the board a strategy for finance, sponsorship and venue and present to the board members at the ANTEC 2019 board meeting in Detroit."

**Motion:** Pete Grelle made a motion to approve the above mentioned item, Kishor Mehta seconded, and the motion passed at 9:52 AM (EDT).

### Financial Report – Jim Wenskus, Treasurer of IMD

Srikanth Pilla presented the financial report on behalf of Jim Wenskus and mentioned that there was a balance of ~\$39,000. There was a question by Pete Grelle on the over budget for the general office expenses.

**Motion:** Kishor Mehta made a motion to accept the financial report, Jeremy Dworshak seconded, and the motion passed at 9:55 AM (EDT).

### Communications Committee Report – Rick Puglielli, Chair & Adam Kramschuster, Co-Chair

Rick Puglielli asked the board members to contribute to the contents for the newsletter. He requested that the interested members should send their contents to Heidi Jensen by end of the week. Rick also suggested to put together a committee to review the contents of the newsletter. Ideas to improve the contents in the newsletter as well as getting more sponsors was discussed. Adam Kramschuster offered to help in the review of the contents of the newsletter.

Adam Kramschuster provided an update on the IMD website. He mentioned that the old website was previously hosted personally by Nick Fountas for \$237.72 for 36 months. A new domain name was created for IMD and the website was completely re-built by Heidi Jensen at the new domain (injectionmoldingdivision.org) for a cost of \$2,598.75. The website analytics were discussed. Angela Rodenburgh commented on the website hits and analytics and explained to the board how the analytics were interpreted. New opportunities for sponsorship in the form of banner ads and a blog was discussed. The board also discussed on the topic of putting current newsletter sponsors on the website and agreed.

Srikanth Pilla offered to create a YouTube channel for IMD to host 5-10 minute videos. He will follow up with an email on the update of the YouTube channel.

### OYIME Award Nominations – Lynzie Nebel

Lynzie said that no award nominations were received as of today. Lynzie suggested to advertise the OYIME award on LinkedIn and Twitter pages and encourage people to apply. Srikanth Pilla requested the

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board members to advertise the award on their professional media such as LinkedIn. The deadline for award nominations is December 15th, 2018. Jeremy Dworshak commented on the lengthy nomination process. Srikanth said that we were following the process similar to other societies even though it is lengthy. The award will be given at ANTEC 2019.

### Membership Report – Erik Foltz, Membership Chair

Erik Foltz did not have any new updates.

### HSM & Fellows Update – HSM & Fellows Chair Tom Turng

Tom Turng worked closely with Prof. Mohanty and Prof. Hoffman to nominate for HSM fellows.

### Pinnacle Award Discussion

Srikanth Pilla mentioned that the Pinnacle award now has a rolling nomination. Headquarters indicated that the selected candidate can receive the award in any conference or TOPCONS of IMD's choice. Srikanth will send the Pinnacle award documents to Rick Puglielli.

### Nominations Committee Update

Srikanth Pilla shared the presentation and update from Hoa Pham. The board finalized the nominations for 2019-2020 officers. The nominees are Rick Puglielli (chair), David Kusuma (chair-elect), Pete Grelle (Technical Director) and Joe Lawrence (Secretary).

The board discussed about the nomination for Treasurer. Currently, Hoa Pham has been given authority to sign checks when Jim is not able to do so. Pete Grelle and Kishor Mehta volunteered to talk to Jim about asking him to send checks to Hoa Pham. Pete and Kishor will also speak to Jim about the treasurer's role and get back to the board.

The term ends for current board members, Adam Kramschuster, Ray McKee, David Kusuma, Kishor Mehta and Edwin Tam by ANTEC 2019. The current board officers Pete Grelle and Jim Wenskus are also up for election. Srikanth requested all of these board members who are up for re-election to send their short bio to Hoa Pham as soon as possible.

Finally, a list of ANTEC technical program chairs was presented

- 1) ANTEC 2019 TPC is David Kusuma,
- 2) ANTEC 2020 TPC is David Okonski,
- 3) ANTEC 2021 TPC is Joseph Lawrence,
- 4) ANTEC 2022 TPC is Chad Ulven
- 5) ANTEC 2023 TPC is Ray McKee

### Councilor Report – Susan Montgomery, Councilor

Jeremy Dworshak presented the financial summary from headquarters. The operation is a small amount in the black. The budget for this year is hoping to be slightly negative or breakeven. The VP reports were also presented by Jeremy. Insurance coverage of chapters and divisions were discussed. The divisions are sepa-

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rate entities and there is no coverage. Hence, we need to get division insurance for \$450/year before October 1, 2018. Srikanth Pilla has already secured the insurance for IMD and we are covered. It's very probable headquarters will end the 2018 budget year financially negative. The financial reports, thru August 2018 we are showing a balance of (\$16,000).

There are 3 open positions on the SPE Executive Board and Jeremy announced to the IMD board that he is running for President-Elect for the next year beginning in January 2019. Srikanth suggested to put this information on the IMD newsletter and Jon Ratzalf seconded this as a good idea. The next councilor meeting is on December 13th as a conference call.

**Action item:** Rick Puglielli will include the information that Jeremy is running for President-Elect of SPE in the newsletter.

### New Business & Round Table – Srikanth Pilla, Division Chair

Srikanth Pilla needed speakers for a revived chapter in Atlanta, Georgia to speak from IMD board. Jeremy suggested that they can reach out to the headquarters to inquire for speakers. Jeremy mentioned that while he was doing research for his presentation, he found that Peter Simons is the oldest living SPE president at an age of 99 years. Jeremy wanted to invite him to the board meeting in Orlando and board supported that as a great idea.

SPE's website is setup for helping find current members in a region or area.

This could be employed to help the 'revived Atlanta' chapter to find a speaker.

Here's the steps:

- Log into the SPE web site, and go to [www.4spe.org/directory](http://www.4spe.org/directory) (or click on the Member Directory link),
- Enter a zip code of an area within the Section boundaries, and a search radius
- Click "Search"

### Adjournment – Srikanth Pilla, Division Chair

**Motion:** Pete Grelle made a motion to adjourn the meeting. Jeremy Dworshak seconded, and the motion passed. The meeting was adjourned at 11:45 AM (EDT).

The next meeting will held in January at the Tupperware headquarters in Orlando, Florida. The date and timing will be communicated by Srikanth Pilla (Division Chair).

## IMD Leadership

### DIVISION OFFICERS

#### IMD Chair

Srikanth Pilla  
Clemson University  
[spilla@clemson.com](mailto:spilla@clemson.com)

#### IMD Chair Elect

Rick Puglielli  
Promold Plastics  
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#### Treasurer

Jim Wenskus  
[wenskus1@frontier.com](mailto:wenskus1@frontier.com)

#### Secretary

Joseph Lawrence  
The University of Toledo  
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#### Education Chair, Reception Chair and TPC ANTEC 2019

David Kusuma  
Tupperware  
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#### Technical Director

Peter Grelle  
Plastics Fundamentals Group, LLC  
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#### Past Chair

Raymond McKee  
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Erik Foltz  
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#### Councilor, 2017 - 2020

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### BOARD OF DIRECTORS

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#### TPC ANTEC 2018 ANTEC Communications Committee Chair

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#### TPC ANTEC 2019

David Kusuma  
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#### TPC ANTEC 2020 Sponsorship Chair

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#### TPC ANTEC 2021

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#### TPC ANTEC 2022

Chad Ulven

#### TPC ANTEC 2023

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#### Membership Chair

Erik Foltz  
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#### Engineer-Of-The-Year Award

Kishor Mehta  
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#### Awards Chair HSM & Fellows

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# Call for Technical Papers & Article

**We are currently seeking informative and educational articles on a variety of topics pertinent to the injection molding industry.**

Do you have a paper or article you would like to publish in the next newsletter? Share your knowledge with the SPE Injection Molding Division members.

For more information on submissions visit:  
[www.injectionmoldingdivision.org](http://www.injectionmoldingdivision.org) or send your articles to:

**[PublisherIMDNewsletter@gmail.com](mailto:PublisherIMDNewsletter@gmail.com)**

## Message from the Publisher

I hope you enjoyed this issue. The holidays are fast approaching as we all gear up to spend time with our loved ones and friends. But keep in mind to start planning for your trip to Detroit Michigan for the ANTEC 2019 show. Our website gives all the details on the schedule, registration and exhibitors. Make sure you visit the injection molding division site for all the details and plan ahead.

Our next issue will be Spring 2019 and as always we are seeking authors to share their knowledge of the injection molding industry. If you have a paper you would like to share you can e-mail your submission.

Happy holidays to everyone and see you this spring.

Heidi Jensen  
[PublisherIMDNewsletter@gmail.com](mailto:PublisherIMDNewsletter@gmail.com)

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