

# Mold Technologies Division



Division of Society of Plastics Engineers

Volume 40, Issue 2, Winter 2019

## Message from the Chair

Happy New Year to all of you from the Mold Technologies Division board! May 2019 be a year of continued success for your company, for yourself professionally and for yourself personally.

Please join us in welcoming John Berg to the Mold Technologies Division team. John has joined us in the capacity of Newsletter Editor. Please read within this newsletter his dynamic thoughts on our industry.



**Renee Nehls**

SPE Mold Technologies Division Chair

ANTEC 2019 is soon approaching. The venue is Detroit, MI. March 18-21, 2019. The Mold Technologies Division first session is Monday afternoon March 18th. The second session, co-hosted with the Injection Molding Division, is Tuesday afternoon March 19th. A shout out to Rocky Huber, Technical Program Chair, and his team for the preparation efforts of many insightful speakers and thought provoking speakers in this year's lineup. I look forward to meeting those who attend ANTEC this year. Please be sure to introduce yourself!

Amerimold 2019 is being held in Rosemont, IL. June 12-13, 2019. Mold Technologies Division is accepting nominations for Mold Maker of the Year and Mold Designer of the Year. Each award includes a monetary honorarium to a trade/technical school or university of their choice. Both awards are presented during Amerimold. Please continue through this newsletter for the list of criteria and nomination form.

Networking...What does networking mean to you? Is it an opportunity to uncover a mold builder for your new niche product? Is it an opportunity to meet a potential new employee/employer? What does networking look like to you? A SPE affiliated plant tour? Social media? Networking remains relevant regardless of your generation. As you go about your week, please embrace and respect the networking means and methods of all generations as networking remains the number one cause of job attainment.

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## Editor's Commentary

I was very honored to be considered, by my friend Renee Nehls, for the editor position of this communication vehicle. I want to be an active promoter, supporter, and contributor to the art, science, and business of mold making. I believe it is vitally important and I believe it rocks.

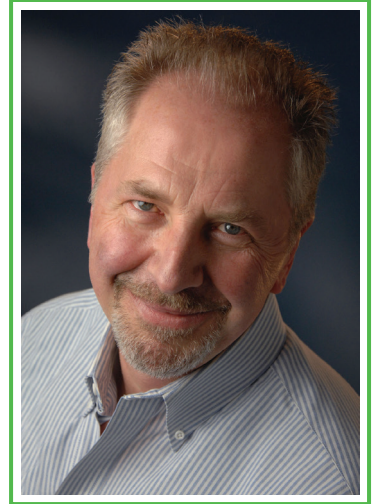
In 1989, I worked for a marketing agency that primarily served the business-to-business sector. One of our specialties was the production of promotional videos illustrating a company's capabilities. Along with traditional print collateral, a "company video" became a must-have sales tool for progressive businesses. This was well before there was a Windows interface – much less PowerPoint. One of the early industries to embrace business videos (at least in the Milwaukee area) was tool and die – from machine shops to mold makers. And the medium embraced the shop because the visuals associated with our industry can be stunning.

In five years, I got to know and work with at least three dozen shops during which a technology change was taking place – spindles were rotating faster, EDM was starting to take off, computers began aiding in design (and inventory, accounting, employee management, etc.), and plotters were plotting faster. Mold making took the changes and technology advancements and fueled its growth because that is what mold makers do. Mold makers take available resources and magically create things that make things.

There is a technology change going on right now, as well. For example, additive manufacturing, tighter-tolerance-than-ever machining centers, flexible robots / cobots, new surface treatments and quickly-advancing process simulation. Industry pundits and overpaid guest speakers love using the term "disruptive" technologies to describe this progress and enjoy espousing how one had better get on the train now or risk being left behind. In the '90s, they said the same thing but used the term "paradigm shift" instead because that sounded cooler than "significant changes."

However, a mold maker doesn't see advancements as disruptive or use the word "paradigm." A mold maker evaluates the scope of the need, develops a solution, assesses the resources required to build and goes to work. When they are done, we will have a marvelous something that makes something else – something that someone wants very much and plenty of.

A veteran mold maker used to tell me, and anyone within earshot, that "every object we use, every day of our life, is the result of a mold maker's efforts." It sounds like a brag, but it is, in fact, a fact." Mold making is vitally important — Mold making rocks.



**John Berg**

SPE Mold Technologies Division  
2018/2019 Newsletter Editor



## Sponsor's Index

Sponsor	Page	Sponsor	Page
Boride Engineered Abrasives	16	Progressive Components	11
DME	8	Synventive Molding Solutions	7
HASCO	15	Wisconsin Engraving/Unitex	11
PRISM Plastics	9		

## A New Method for Calculating Water Passage Sizes That increases Coolant Flow and Reduces Pressure Loss and Cycle Time.

Most mold designers are familiar with designing a parallel arrangement of waterlines. This is done during water manifold design and when designing circuits to feed bubblers (see Figure 1). The area of the drilled sub-lines is calculated and then a feeding line size is chosen that has at least as much area as the total area of the lines being fed. A very straight-forward process.

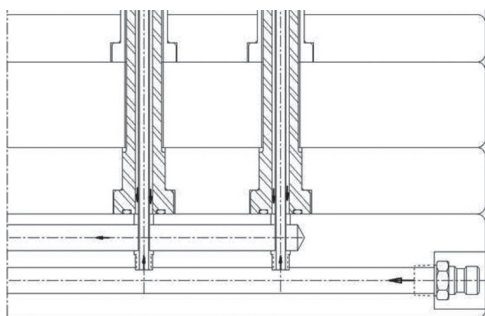


Figure 1. A parallel arrangement of waterlines feeding bubblers.

However, what happens when the channels being fed are not round? Some examples would be a cooling channel around a round cavity or bubbler residing in a drilled hole. Most moldmakers and mold designers have been taught that the cooling channel area should be equal to or smaller than

the area of the hole that feeds it regardless of the shape. This method works for round channels but problems arise when dealing with non-round passages, particularly annular passages. Here, I will present an alternative method for calculating proper channel sizes to optimize coolant flow with minimal pressure losses with non-round channels.

### Hydraulic Diameter

While reading fluid mechanics books for writing software, I stumbled upon the equivalent hydraulic diameter method for determining channel sizes. The HVAC trade has been using this calculation for years to size ventilation channels and duct work, but I have never seen it used in plastics or tooling.

The hydraulic diameter method is only used on non-round shapes to calculate the size that an equivalent round passage would be, based on a ratio of the area of a non-round passage's cross-section to that passage's perimeter.

When working with non-round passages, the hydraulic diameter is also substituted for diameter "d" in equations used to determine laminar or turbulent flow, pressure losses and to define friction factor and relative roughness. Fortunately, the area and

perimeter of the shapes in question do not usually need to be calculated manually anymore as that information can usually be extracted from today's CAD software.

More elaborate methods for fluids calculations exist, but the hydraulic diameter equation can provide reasonable results accurately and quickly. The hydraulic diameter equation is:  $dh = 4 A / p$

( $dh$  = hydraulic diameter,  $A$  = area section of the passage and  $p$  = perimeter of the passage).

**Round.** Let us begin testing this equation on a round diameter (see Figure 2;  $\pi$  = Pi, ratio of a circle's circumference to its diameter,  $D$  = actual diameter):

$dh = 4 A / p$ ,  $A = \pi D^2 / 4$ ,  $p = \pi D$  and  $dh = ((4 (\pi D^2 / 4)) / \pi D)$ .

The 4's and  $\pi$ 's cancel out, and so we are left with  $dh = D^2 / D$ , so  $dh = D$ . The results are as expected. In a round passage, the hydraulic diameter is the same as the actual diameter.



Figure 2. The hydraulic diameter of a round passage is equal to the hole's diameter.

**Rectangle.** Now let's test the hydraulic diameter of a rectangular duct or pipe (see Figure 3;  $a$  = width/height of the passage and  $b$  = height/width of the passage):

$dh = 4 A / p$ ,  $A = ab$ ,  $P = 2a + 2b = 2(a + b)$ ,  $dh = (4(ab)) / (2(a + b))$ ,  $dh = 2ab / (a + b)$ .

Notice the difference between calculating a feeder line for the rectangular passage using the equivalent area calculation and using the hydraulic

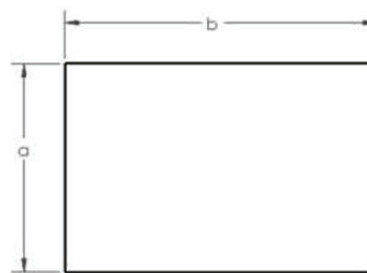


Figure 3. Hydraulic diameter of a rectangular passage equals four times the area of the rectangle divided by the perimeter.

diameter. Assume the rectangle is 0.200 x 0.300 inches, which has an area of 0.060 square inches. The area method would imply a diameter of 0.2764. The hydraulic diameter calculation indicates that the effective passage is smaller at 0.240.

The reason for this is the circle has the most efficient perimeter-to-area ratio of all of the planar geometric shapes. The sphere is the most efficient volume.

The fluid has a stationary boundary layer at the walls of the fluid passage, and the fluid shears as it reaches maximum velocity at the passage's center. This is similar to polymer flow, except the velocity profile is much less parabolic due to water's lower viscosity. This means that the fluid velocity goes from zero at the boundary to maximum velocity at a level not too far from the boundary in less viscous materials. The viscous materials, like plastic, reach their maximum velocity at the center of the flow passage.

As the shape of passages deviate from round, the perimeter increases relative to the area of the opening. As the length of the perimeter increases, the pressure to force fluids through the passage increases, due to the increased shear forces.

**Annular.** The industry standard method of using the equivalent area to calculate the size of bubbler tubes, and holes that they reside in, results in undersized drilled holes or oversized bubblers with truly excessive pressure losses, clogged lines (especially with the smaller tubes) and longer than

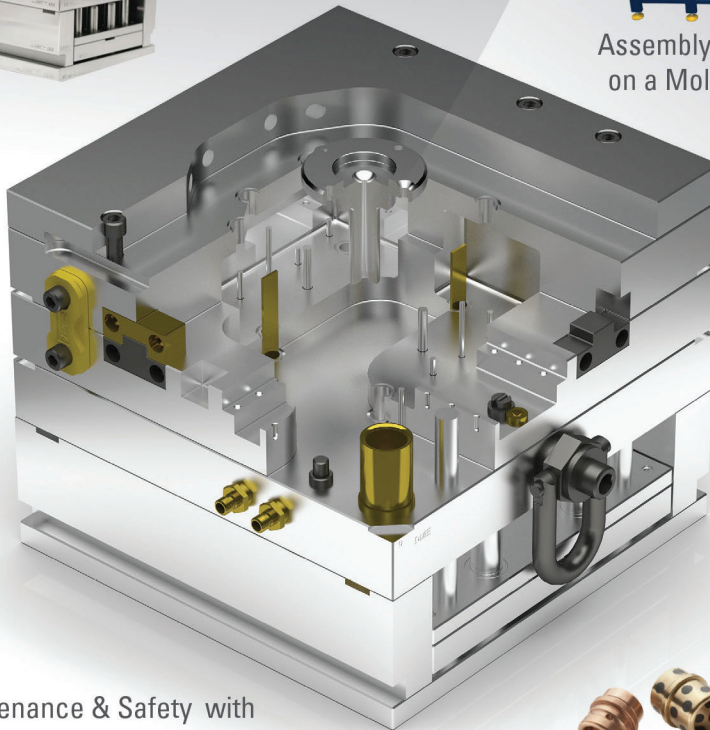




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necessary cycle times. So, let's apply the hydraulic diameter to an annular channel (see Figure 4) and see what happens:

$$dh = 4 A / p, A = \pi/4 (D^2 - d^2) P = (\pi D - \pi d) dh = (4(\pi/4 (D^2 - d^2)) / (\pi D + \pi d))$$

The 4's and  $\pi$ 's cancel out, and we are left with:  $dh = (D^2 - d^2) / (D + d)$ . You may recognize  $(D^2 - d^2)$  from high school algebra and the FOIL (first, outer, inner, last) method of multiplication:  $(D + d)(D - d) = (D^2 - d^2)$ . If we use this substitution in the numerator, we arrive at  $dh = (D + d)(D - d) / (D + d)$  dividing numerator and denominator by  $(D + d)$ . Then we have a very simple calculation of  $dh = (D - d)$ .

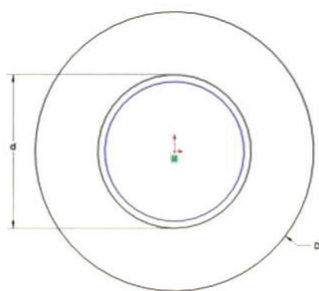


Figure 4. The annular channel is the area between the hole diameter "D" and the outside of the bubbler "d". The hydraulic diameter is  $dh = (D - d)$ .

The hydraulic diameter of the area between the outside of a bubbler and the inside of a drilled hole is simply the drilled-hole diameter minus the bubbler outside diameter. Consequently, the drilled-hole diameter that provides an equivalent hydraulic diameter outside the bubbler can be calculated by adding the bubbler's inside and outside diameters.

A well-recognized supplier-published chart shows a bubbler with an outside diameter of 0.437 inch, an inside diameter of 0.307 inch and a recommended channel size of 0.531 inch. These sizes are based on what we have all been taught about "the areas being equal inside and outside the bubbler". In order to have the annular channel's hydraulic

diameter be equivalent to the inside diameter of the bubbler, the hole would have to be 0.737 inch in diameter ( $0.531 + 0.307$ ). This is especially important with smaller bubblers that are prone to clogging.

The concept of hydraulic diameter may seem counter-intuitive, as you can get more fluid flow and less pressure drop with a smaller bubbler when the hole size is kept constant (if it was calculated by the equivalent area method). This is because the excessive pressure loss is caused by the restriction of flow outside the bubbler when using the equivalent area method to size the holes. I have actually increased water flow and reduced cycle time in existing molds by moving to a smaller bubbler, when the hole size must be kept constant.

### Simple Solutions

Some suppliers offer high-flow tubes for water bubblers. These are thin-wall tubes with an integral thread available with two different thread sizes for each tube diameter. There are high flow tubes with a larger tube for each thread and ones with a smaller tube for the same thread. If you check your bubbler and hole sizes and discover that your mold was designed with these parts sized using the equivalent area method, and that your mold has the high flow tube with the larger tube for the given thread size, simply make a new bubbler with the smaller tube version. This will immediately increase flow rate, decrease pressure drop and potentially reduce cycle time. Keep in mind that this may not always work, as there are many other parameters that could be controlling cycle time.

The bottom line is that many non-round water channels have a pressure loss and Reynolds Number that is higher than its area would indicate. A solution is to use the hydraulic diameter equation to design larger non-round channels to increase cooling flow and reduce pressure loss and cycle time.



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## Advantages of CT Scanning for Industrial Applications

Melissa Butrie

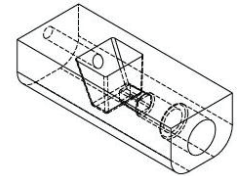


a division of Nypromold Inc., Clinton, MA

2018 Society of Plastics Engineers Annual Technical Conference

**Dimensional Inspection – With CT Scanning data is captured in less than an 1 hour and is accurate to 5-7 micron.**

- 4 Complex datum alignments
- 5 Cross-section callouts
- 6 Draft angles
- 7 Hidden features
- 8 Small radii
- 9 Concentricity, perpendicularity, parallelism, and flatness callouts

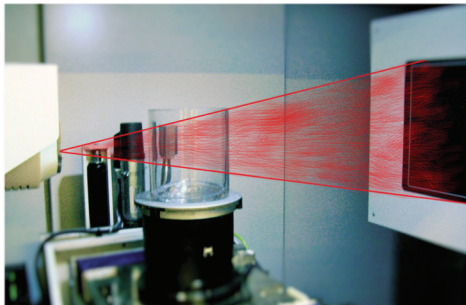


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3D ProScan

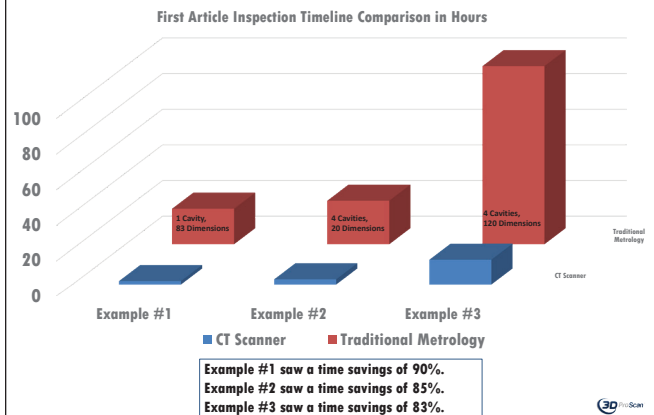
## What is Industrial CT Scanning?

Similar to a medical CAT scan, a part is placed in the scanner and rotated 360° while x-rays capture 2D images. Those 2D images are then converted to a 3D point cloud.



3D ProScan

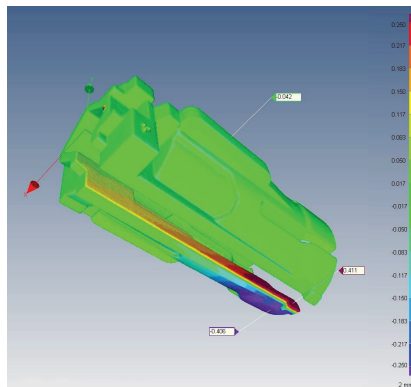
**Dimensional inspections with CT Scanning are capable of all GD&T measurements and use CMM software programs.**



3D ProScan

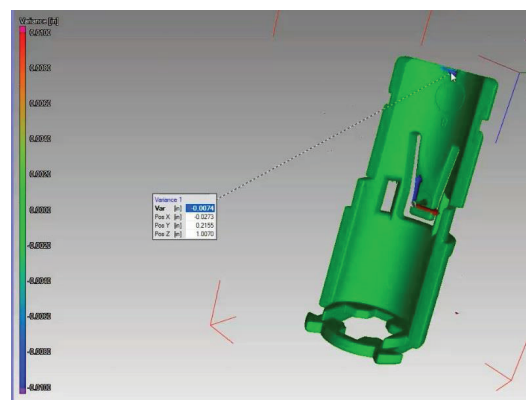
**Part to CAD Overlays - easy to interpret, visual comparisons of the molded component to the CAD model.**

- Overlays quickly determine which process is closest to intended design
- Alignment is virtually set and can be changed as needed.
- Identify warp, shrink, and excess material



3D ProScan

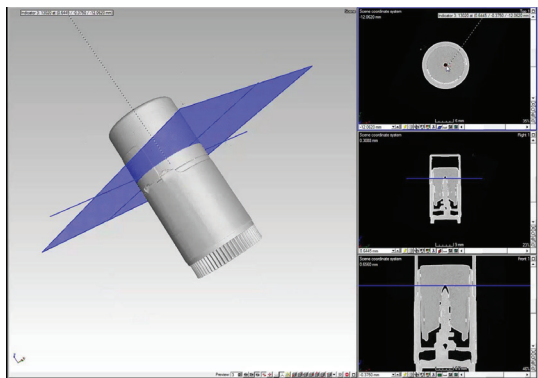
**Part to Part Comparison - identifies differences between parts from different lots, tools, or site locations.**



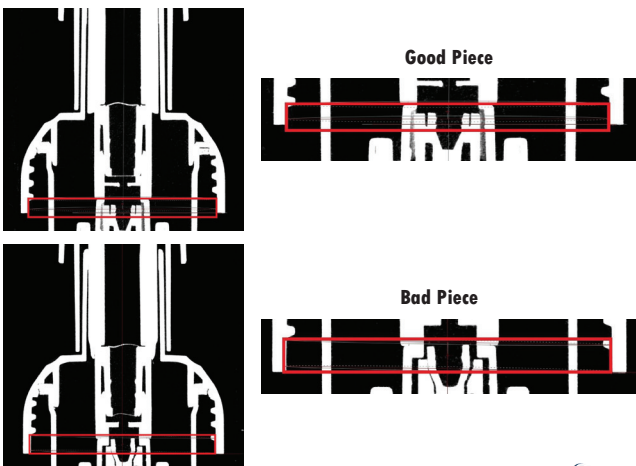
3D ProScan



**Assembly Analysis** - a non-destructive method to conduct defect analysis and evaluate internal and external features for form and fit.



Whether parts are simple or complex, CT scanning gives you the benefit of nondestructively viewing and measuring the part, inside and out.

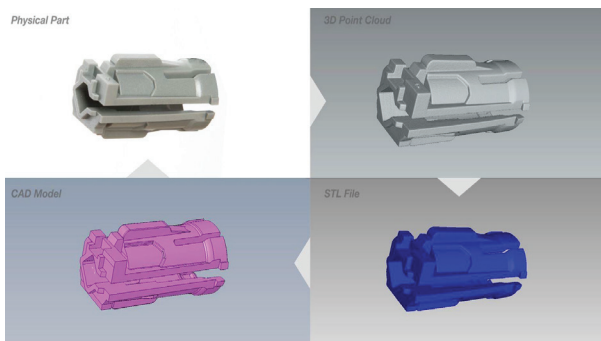


**Thank you!**

For more information, please contact us at:

Melissa.Butrie@3dproscan.com  
 978-365-8301  
 144 Pleasant Street  
 Clinton, MA 01453  
 3dproscan.com

**Reverse Engineering with CT scanning** can provide models for legacy parts or aid in the development of replacements.

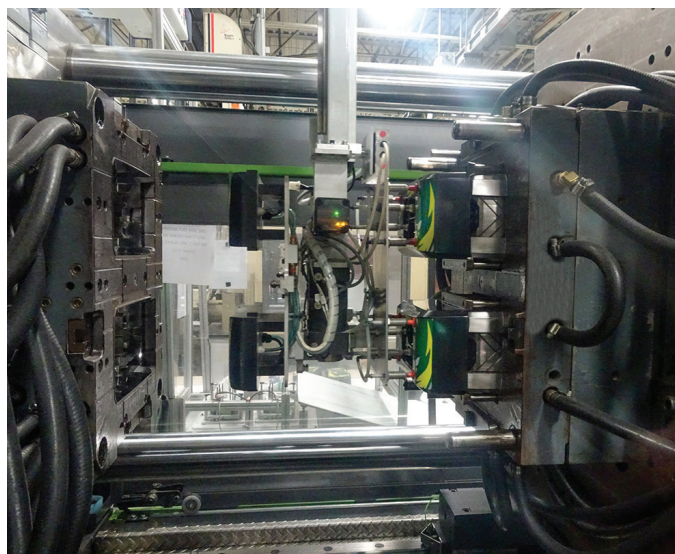


# Anticipating IMD Process Challenges Before and During Product Launch

*By Jim Naatz, Sussex IM Sales Account Manager*

It seems more and more molders find they are still in product development during a product launch particularly when it comes to in mold decorating and in mold labeling. Brand owners many times do not have appropriate funding in their budget for prototyping for IMD, so they end up going right into production with their fingers crossed and hoping for the best. While this is risky, there are still things that can be done to help mitigate that risk and still hit the product launch window with a successfully decorated part. Yes, the stars all need to align, but with up-front studying and planning with all the stakeholders it can be done.

Tooling engineers and mold makers need to be



*IMD adds additional materials, equipment and tolerances to the traditional injection molding process. A proactive approach to project evaluation involving all participants in the supply chain is critical to launch and long-term production success.*

involved as early as possible and understand the customer requirements and part geometry requiring the IMD. Technique. Resin type, gating and cooling should all be discussed with the customer with a clear understanding of the area that needs to be decorated and any challenges you may be up against regarding complex geometry. A mold flow analysis should be done so you can verify the flow front, pressures, and temperatures while the part is being processed. Mold flow analysis should be done at the beginning of any molded part development but is particularly critical when you introduce an IMD component to the product. Your automation engineering team needs to understand the label geometry, magazine system, part geometry and placement into the mold.

But what happens when you find that you run into issues during start up even when you did all your homework? Hopefully you have done an FMEA (Failure mode and effects analysis) and have a plan in place to overcome these issues. But sometimes with IMD you just don't know what you don't know.

Here are some things you can do to prepare for the challenges you may face:

**Design your mold to have room for adjustments.** Be prepared to make slight changes to the gate and even geometry surrounding the gate to help with pinning, over heating or gassing issues in the gate area. This can be difficult to do but will pay off big if you run into problems.

**Design your magazine system and end of arm tooling to be adjustable.** Altering the size of the IMD film or label to help with pinning or registration may require a new nest or end of arm tool. If you



design in adjustability you can quickly overcome any location and static charging issues during the initial sample.

**The IMD film / label supplier should be prepared with different material options.** Be prepared with different materials with various thicknesses to help overcome any issues with registration, knitting or burn through. Be sure to have several different options made ahead of time so you can quickly mold them, evaluate their performance and overcome any issues you are having.

**Work with your customer** to limit art and die line to one or two variations to limit the variability at start up. Too many different designs and different die lines can introduce variability that can be challenging, especially when you are trying to get a product launched. Once that initial design process goes well and is ready for production, then introduce and sample different options. Set the expectation early to achieve success early in the launch.

Someone once told me, "In Mold Decoration is not science, it's Black Magic". While, I certainly understand where he was coming from, you can help alleviate some of these start up issues and challenges by planning ahead.

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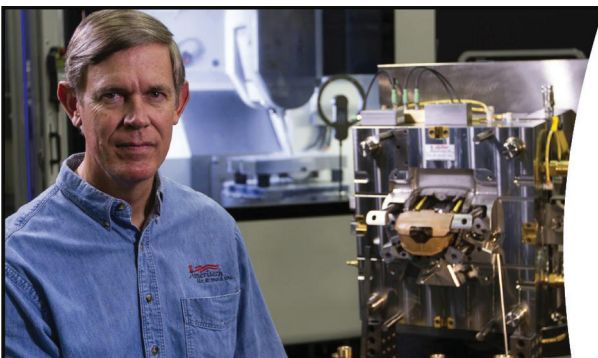


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# CALL FOR CANDIDATES

## SPE MOLD TECHNOLOGIES DIVISION

### Mold Maker and Mold Designer of the Year 2019 Award

Are you an innovative mold designer or mold maker? Do you know someone who deserves to be honored for their mold making skills or mold design creativity and expertise? If so, please consider nominating them for the 2019 SPE Mold Technologies Division (MTD) Mold Maker of the Year and Mold Designer of the Year.

Each year, the SPE MTD honors two top-notch individuals in mold making and mold design. The criteria are pretty simple. Candidates should have:

- Made a contribution to the industry or the SPE
- Strong technical experience
- A reputation for conducting business in a fair and honest manner

Anyone may submit a candidate for either of these two prestigious honors and the recipient need not be an SPE Member. Fill out your contact information and the contact information for the award candidate and send it with the required supporting documents by May 1, 2019.

Please identify the award that for which you are submitting the candidate, be it Mold Maker of the Year, or Mold Designer of the Year. Please include information on the candidate (bio, description of accomplishments, etc.) to explain why you feel that your candidate should receive the respective award.

The MTD Board of Directors will select the award recipients based on the merits of the candidates.

Your contact information:

Full Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

\_\_\_\_\_

Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

Please indicate which award applies to the candidate (check the box that applies):

☐ Mold Maker of the Year 2019      ☐ Mold Designer of the Year 2019

Please note that in some cases, a candidate can be suitable for consideration for either award if their background is in both mold making and mold design.

Contact information for award candidate:

Full Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

\_\_\_\_\_

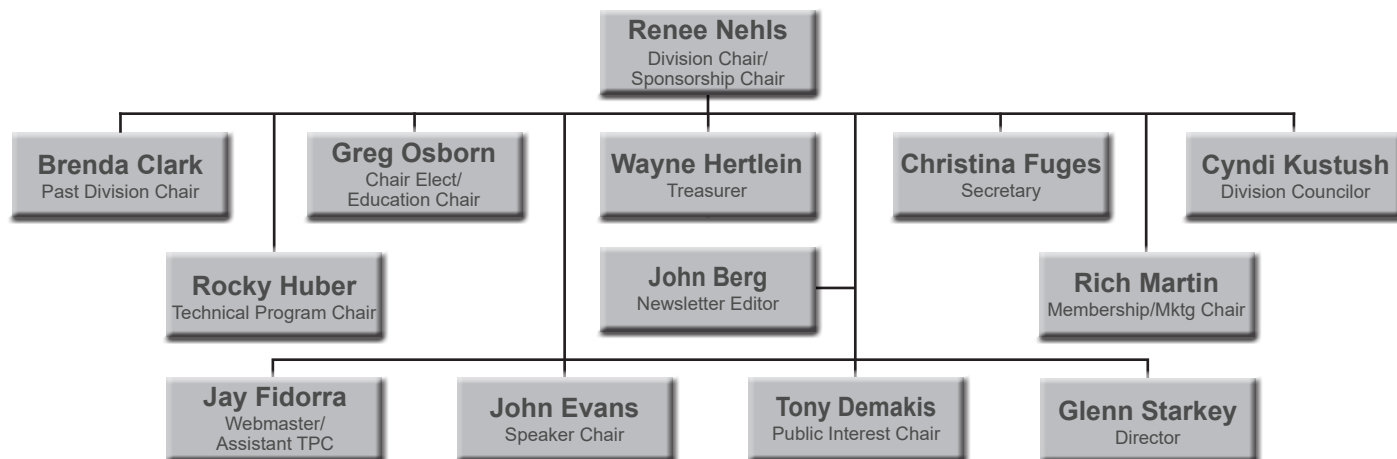
Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

Bio for candidate is attached. (Note: Bio/Description must be submitted for consideration.)

Send Nominations to Wayne Hertlein - email: [wayneh7758@aol.com](mailto:wayneh7758@aol.com)



## 2018/2019 BOARD OF DIRECTORS



## OUR MISSION

*"To be the leading industry resource for technical information to advance plastic mold engineering technologies, while fostering industry growth, education and leadership."*

## CONTACT INFO.

### Renee Nehls

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Sponsorship Chair  
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[renee.nehls@outlook.com](mailto:renee.nehls@outlook.com)

### Brenda Clark

**Past Division Chair**  
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[bclark@hasco.com](mailto:bclark@hasco.com)

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### Cynthia Kustush

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[CKustush@gardnerweb.com](mailto:CKustush@gardnerweb.com)

### Rocky Huber

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[rocky.huber@dzynsource.com](mailto:rocky.huber@dzynsource.com)

### John Berg

**Newsletter Editor**  
Sussex IM  
[jberg@sussexim.com](mailto:jberg@sussexim.com)

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**Membership/Marketing Chair**

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[rich.martin@eimotech.com](mailto:rich.martin@eimotech.com)

### Jay Fidorra

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### Glenn Starkey

**Director**  
Progressive Components  
[Glenn.Starkey@procomps.com](mailto:Glenn.Starkey@procomps.com)

# SPE Mold Technologies Division

## December 20, 2018 Meeting Minutes

	Present	Excused	Absent		Present	Excused	Absent
Renee Nehls, Chair	X			Wayne Hertlein	X		
John Berg	X			Rocky Huber	X		
Brenda Clark	X			Cyndi Kustush	X		
Tony Demakis		X		Richard Martin		X	
John Evans		X		Greg Osborn	X		
Jay Fidorra		X		Glenn Starkey		X	
Christina Fuges		X		Kathy Schacht-SPE HQ		X	

### Chair Report – Renee Nehls

- Call to order at 4:05 p.m. ET. Welcomed John Berg as a guest and impending newsletter editor on BOD.
- Inspirational challenge updates: Wayne participated in apprenticeship week. Wayne is leading Letica's apprenticeship with the State of Michigan. Brenda and Cyndi each shared outreach efforts. Rocky had a plant tour for local community college advanced manufacturing students to introduce them to mold building.

### Chair-Elect Report – Greg Osborn

- Pinnacle Awards: Renee would like to ensure we apply for Pinnacle on April 15 for sure, but perhaps also for the January deadline. Greg will review the criteria and report back his recommendations for applications. He will be the main point of contact for submitting our Pinnacle entries.
  - <https://www.4spe.org/i4a/pages/index.cfm?page-ID=3582>
  - Submission deadlines are January 15, April 15, July 15 and October 15 each year.

### Secretary Report – Christina Fuges

- October 18, 2018 minutes were approved October 25, 2018.

### Treasurer Report – Wayne Hertlein

- Treasurer update
  - Checking: Total: \$69,651.45
  - Investment Accounts: Mold Technologies Div Total \$159,977.49
  - ITQ Foundation Summary Michigan Department of Treasury: Total: \$ 536.99
  - Investment Account: ITQ Foundation Total \$536.99
  - Mold Technologies Div Net Worth \$160,514.48

### Mini Tech / TPC Chair Report – Rocky Huber & Jay Fidorra

- ANTEC 2019
  - Joint session on Tuesday afternoon with Inj. Molding Div. Rocky will ask Dave Kusuma, IMD's TPC, if they are doing another party/reception in 2019 and if we can sponsor it. Greg made a motion to set up a \$500 sponsorship for the injection molding division if possible.
  - Renee attending. Rocky may attend. Greg, Cyndi and Wayne will try.

- Keynote speaker Matt Malonia has been secured to speak on laser ablation.
- Plaques or some other token of our Division's appreciation will be given to each speaker. Renee will meet with Glenn to discuss some options.
- Invited speakers have free admission for the day of their presentation.

#### Councilor Report – Cyndi Kustush

- Council update:
  - Minor but needed updates were made to the SPE Bylaws.
  - Executive Board elections will be held very soon. Open positions include President-Elect, VP of Marketing and VP of Young Professionals.
- SPE and PLASTICS will continue a partnership that provides free SPE membership to students.
- ANTEC Detroit will be held March 18-21, 2019, at Renaissance Center. New programs added. ANTEC has been reformatted into two programs, INSPIRE and INSIGHT, to best represent the ideas and trends shaping our plastics industry. Details available here: <https://www.4spe.org/i4a/pages/index.cfm?pageid=3697>
- ANTEC 2019 student activity support (\$) – SPE CEO Pat Farrey said sponsorships are still needed for various aspects of ANTEC, including some student-related activities. This PDF provides sponsorship opportunities: <https://www.4spe.org/files/events/2019/ANTEC/ANTEC2019Sponsorship->




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- ANTEC 2019 BOD discounted rates (\$) – Cyndi said that all details are published on Leadership Lane in The Chain. In a nutshell, all chapter leaders who attend the new Chapter Leader Roundtable are invited to attend ANTEC for free (*All Chapter officers and Councilors are invited to attend.*). If anyone cannot make that, there is still a significantly-reduced rate for attendance – like what the regular students are paying. The Chapter Leader Roundtable will take place Sunday, March 17, from 2 until 5 p.m. Attendees must attend the entire roundtable to receive free admission to ANTEC. \$600 savings. RSVP by [clicking here](#). Once you complete the RSVP form, you'll receive the codes for your discounted ANTEC registration rate.
- Councilor term ends June 2019 – Cyndi's first term ends on June 30, 2019. She can serve one more term before passing the position on to someone else. This will need to be discussed in Q1 of 2019.

### Membership Chair Report – Richard Martin

- Membership update
  - 529 members
    - 387 USA
    - 142 other countries
  - Breakdown
    - 1 distinguished
    - 55 students
    - 23 emeriti
    - 26 young professional
    - 424 professionals

### Sponsorship Chair Report – Renee Nehls

- Sponsorship / collection update
  - One outstanding invoice. Renee is chasing them.

### Newsletter Editor Report – Open Position

- John Berg of Sussex IM has volunteered to fill this position
  - Vote on John filling this position. Will officially vote John onto BOD at next meeting when a quorum is present (February 21).
  - Next newsletter January 2019. John has already begun writing and he has some ideas for other material including technical pieces, events, etc.

### Awards Chair Report – Wayne Hertlein

- Mold Maker of the Year and Mold Designer of the Year (with Richard): NEED NOMINATIONS! Send nominees to Wayne. Winner announced at Amerimold 2019.

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- Fellows and HSM: Wayne and Glenn looking for eligible SPE members to nominate.
- History update: Our Division's 40th anniversary in 2019. Wayne is working with Glenn Beall to finalize the history of the Division.

#### **Education Chair Report – Greg Osborn**

- Grant status update: We have received a little bit of traction with our LinkedIn posting about applications, but no applications have been received yet.

#### **Marketing Chair Report – Tony Demakis & Jay Fidorra**

- Website/microsite: Pedro at SPE is setting things up, launch in January. Jay has been locked out temporarily and cannot post anything until January. SPE will bill the Division \$500/year to maintain the micro site.
- Booth update (Richard)
  - New booth display on hold until further notice of coordinating website to look the same.

#### **New Business**

- Thank you to Hasco and Progressive for booth transport
  - Scholarship in their name to the recipient of their choice (\$)
  - Everyone agrees we should establish the scholarships, criteria and the amounts. Renee

will lead the creation of the awards; Rocky will assist. Tabled until the next meeting.

- ANTEC 2019 BOD member participation support (\$). Rocky presented a budget for his travel expenses.
  - Rocky: "If you assume a rate of 15% for taxes and fees for the nights chosen, the hotel stay would be \$1,338 and the flight would be \$223 for a total of about \$1560. The ANTEC Super Advanced Price for full conference admission is \$795 for SPE members. However, TPC's are granted free admission as long as they register as Super Advanced, or as Advanced."
  - January 26 is the deadline for earliest registration rate, FYI. TPC's attend free.
- Open discussion: Renee looked back and did not find any precedent regarding making memorial/bereavement donations on behalf of members' family members. We did not vote on a dollar amount, but we did agree that donations should be made for Glenn's dad and Claire's mom. Claire wished to have any donated funds go to an educational program like Plastivan. We will check with Glenn about his wishes.

#### **Next Meeting**

- February 21, 2019

**Adjournment** Meeting adjourned at 4:31 p.m. (Cyndi motioned, Wayne second)



**Do YOU have  
NEWS & EVENTS  
to SHOUT about?**

*The Newsletter Editor is asking that you send your news about new products, your company news, and anything that would be of interest to the members of our Mold Technologies Division. Please forward these news items at any time to [jberg@sussexim.com](mailto:jberg@sussexim.com). Thank you!*

# Newsletter Sponsorship

The SPE Mold Technologies Division Newsletter is now issued four times a year, with readership composed of individuals involved in all aspects of the mold making industry. These issues are made possible through the support of sponsors shown in this Newsletter. SPE Mold Technologies Division thanks these sponsors for their generosity and encouragement in the publishing of our Newsletter.

For information on sponsorship of future issues, please contact:

Renee Nehls, Division Chair & Sponsorship Chair, ORBIS Corporation  
414-530-0660 | [renee.nehls@outlook.com](mailto:renee.nehls@outlook.com)

## Publication Release Dates

Fall Issue  
October 2018

Winter Issue  
January 2019

Spring Issue  
March 2019

Summer Issue  
June 2019

## SPONSORSHIP INFO 2018-2019

### Platinum (\$2500/year)

Ad Specs: 9.75" H x 7.25" W

- Full page color ad in quarterly newsletter for one year circulated to members and distributed at SPE MTD events
- First right of refusal to a tabletop at Technical Tours to educate participants on new technologies/strategies
- Opportunity to submit a technical article for publication in newsletter
- Company logo on signage in MTD booth at AmeriMold
- Company logo on signage at ANTEC
- Company logo displayed at SPE events

### Gold (\$1250/year)

Ad Specs: 4.75" H x 7.25" W

- Half page color ad in quarterly newsletter for one year circulated to members and distributed at SPE MTD events
- First right of refusal to a tabletop at Technical Tours to educate participants on new technologies/strategies
- Opportunity to submit a technical article for publication in newsletter
- Company logo on signage in MTD booth at AmeriMold
- Company logo on signage at ANTEC
- Company logo displayed at SPE events

### Silver (\$625/year)

Ad Specs: 4.75" H x 3.5" W

- Quarter page color ad in quarterly newsletter for one year circulated to members and distributed at SPE MTD events
- First right of refusal to a tabletop at Technical Tours to educate participants on new technologies/strategies
- Opportunity to submit a technical article for publication in newsletter
- Company logo displayed at SPE events

### Bronze (\$250/year)

Ad Specs: 2" H x 3.5" W

- Business card size ad in quarterly newsletter for one year circulated to members and distributed at SPE MTD events
- Company logo displayed at SPE events