Mold Technologies Division

Division of Society of Plastics Engineers

Volume 37, Issue 1, Fall 2015

Message from the Chair

Glenn Starkey

SPE Mold Technologies Division Chair

Good things are happening here at the Mold Technologies Division!

Since our last summer newsletter, our new Board is getting settled into new roles for the July – June fiscal year that we're now in.

Education Chair Greg Osborne has initiated and now is sending grant forms to schools with mold related curriculums, and 3 grants of $2500 are allocated. We're also earmarking $2500 for any requests that come in outside of our reaching out to schools, and we'll review these on a per case basis. If there is a school that is near and dear to your heart… Contact Greg, his info is on page 6.

As a Division we are looking to further partner with other Divisions and Sections, and on November 4th, we collaborated with the Injection Molding Division and Chicago Section for a tour of Winzeler Gear. For all that attended, it was nothing less than jaw dropping. Gear molding is an extremely complex and demanding application, and attendees were able to see best in class manufacturing approaches that enables this molding company to satisfy customer needs worldwide. We're looking for more opportunities for plant tours, for example an OEM with tooling and molding in-house is a target for us. Any suggestions, please drop a line to Cyndi Kustush, Mini-Tech Chair.

Speaking of partnering, our Division partnered with the SPI Western Moldmakers group, at their 25th Annual Mike Koebel Moldmakers Fair on November 11th. We provided speakers, moderated the sessions, and also had a booth representing the Mold Technologies Division. For this event, as well as our presence at AmeriMold and SPE events, we procured a banner to promote our Division, shown on page 3, and we're further getting our materials together for distributing at these events.

Another new development is that for this newsletter, we are expanding from 3 issues per year to 4. This allows us to better communicate on activities achieved and news ahead.

Now thoughts are turning to Antec, in Indianapolis, May 23-25 2016. There is a call out for papers in this issue, please consider presenting or contacting a colleague to present. These are great opportunities to share technology advances with mold designers, tool buyers, repair technicians, etc.

While much is occurring, we still would like to hear thoughts from membership. Feel free to send me a note with any ideas, or if you'd like to get involved as a speaker or possibly a Board member. Our Division Board is made up of those who love our industry… And we're always looking to add more to the team!

In This Issue

Sponsor's Index

A Message from the Newsletter Editor

Clare Goldsberry

SPE Mold Technologies Division
2015 Newsletter Editor

I recently had a tip about a 22-press molder being bought by a large, global diversified industrial manufacturer, NN Inc., headquartered in Johnson City, TN. In checking into that I discovered that the purchase of Caprock Manufacturing in Lubbock, TX, was old news, happening back in May of this year. The real news was the Oct. 30 completion of the acquisition of Precision Engineered Products (PEP), a custom injection molding firm with 13 locations throughout the U.S. specializing in molding components for the energy management, medical device and transportation markets.

NN Inc. is publically traded on the NASDAQ as NNBR, and operates 43 manufacturing facilities in the United States, Europe and China, with a new facility recently announced in Mexico. NN Inc., comprised of Autocam Precision Components, Metal Bearings Components, and Plastic and Rubber Components, reported third quarter net sales of $154.8 million. The addition of PEP will boost that number significantly in the next quarter's report.

The custom injection molding industry has experienced a number of consolidations over the past few years. Many larger companies are flush with cash and need to invest. Many smaller injection molding companies that have successfully developed a good niche in specific markets or technologies are often ripe for the picking. That means that mold manufacturers will be dealing with larger and larger injection molding companies as time goes on. What does that mean?

For one thing, it most likely means that mold making companies will also have to grow in size, technology capabilities, machine capacity and financial strength to meet the demands of these increasingly larger – and publically traded – molding/manufacturing firms.

Mold makers will be less likely to deal with other small, family-owned injection molding firms. Instead, they will be working with large and growing, global manufacturing companies with concerns about stock price, shareholder value and increasing profits. As the landscape changes the playing field will shift and change along with it.

Are you prepared?

DIVISION HOTLINE

For questions or comments about the SPE Mold Technologies Division please contact Glenn Starkey at:

gs@procomps.com
1-800-269-6653

2015 Mike Koebel Mold Makers Trade Fair

The SPE Mold Technologies Division was proud to sponsor, along with Mold Making Technology, the mold technology seminars at the 25th Annual Mike Koebel Mold Makers Trade Fair on November 11th, in Pomona, California. Below are some photo highlights from this key industry event:

Newest member of the SPE Mold Technologies Division Board of Directors, Renee Nehls, a mold designer with MGS, talks to a young man attending the Mike Koebel Mold Makers Trade Fair in Pomona, California, Nov. 11. Included was an afternoon of seminars sponsored by MoldMaking Technology and the SPE Mold Technologies Division.

Jose Flores, Sales Representative for Progressive Components, presents Building a Well-Designed Maintenance Plan. "The mold is the most important asset a company owns. It's responsible for the profits of a company -- it's the money-making tool. Yet, oddly enough it's often the most neglected asset."

Members of the SPE Mold Technologies Division Board of Directors at the Mike Koebel Mold Makers Trade Fair. From left to right: Greg Osborne, Cyndi Kustush, Renee Nehls, Christina Fuges, Clare Goldsberry and Glenn Starkey.

Upcoming Industry Events

Plastics Recycling 2016
February 1-3, 2016
Hyatt Regency New Orleans
www.plasticsrecycling.com

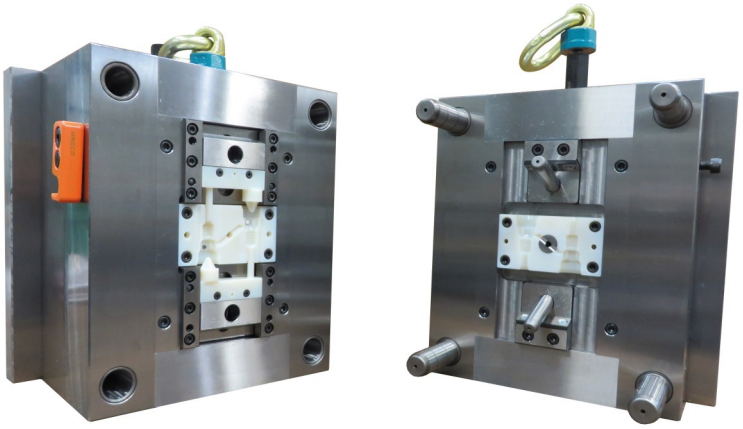
PLASTEC West
February 9-11, 2016
Anaheim Convention Center
www.plastecwest.com

MD&M West
February 9-11, 2016
Anaheim Convention Center
www.MDMWest.com

SPE ANTEC 2016
May 23-25, 2016
JW Marriott Indianapolis, IN
www.4spe.org/ANTEC

ANTEC Call for Papers Deadlines:
Paper Submission: December 8, 2015
*(See **4spe.org/ANTEC** for formatting)*
Paper Review: January 7, 2016
Final Paper Acceptance: January 29, 2016
Final Paper Revision: February 23, 2016
We would like to have several submissions from the Mold Technologies Division so don't delay in sending in your Submission.

Hasco Combines Stratasys 3D Printing with Quick-Change Mold System



3D printing (aka additive manufacturing) continues to move forward with new applications. While mold makers have typically been reluctant to adopt 3D printing for prototype parts and iterative product development before the mold is built, Stratasys Ltd. and Hasco GmbH have teamed up to develop a rapid, cost-effective method of producing low volumes of injection molded prototypes by integrating Statasys 3D printing with its K3500 quick-change mold system.

Using this innovative approach, molders can quickly change between inserts for different product, enabling them to cost-effectively produce low volumes of injection molded parts for samples, prototypes and small production runs. Hasco 3D printed the inserts in the pictured mold, in Stratasys' ultra-tough Digital ABS material using the Objet500 Connex Multi-material 3D Production System. With a 3D printed mold insert taking only hours to produce, molders can make design modifications to the product for a fraction of the time and cost of conventional tooling methods.

"With time-to-market cycles shorter than ever and production quantities dropping, our customers are now looking for solutions that enable them to deliver prototypes quickly and cost-effectively," says Dirk Paulmann, Executive Vice President, Sales & Business Development at Hasco. "Compared with conventional metal or aluminum inserts, our new approach offers molders the flexibility to quickly produce and switch inserts, making them much more productive and profitable.

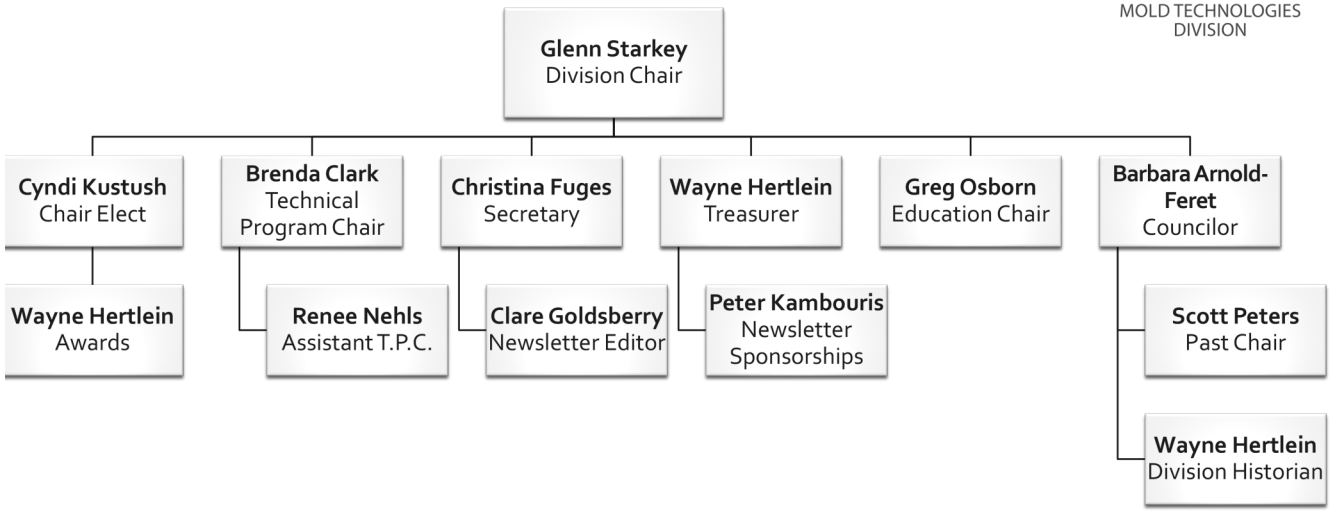
"Combining our longstanding heritage in mold making with Stratasys' pioneering expertise in 3D printing injection molds, this best of both worlds technique is the future of prototype and low volume production."

When producing a sealing plug for its industry-standard A8001 clamping fixture, Hasco identified that the walls of the ABS plastic sealing screw would need to be 12mm thick to seal the large number of threaded holds. Given this geometry, it was clear that the screw could not be produced using the conventional injection molding process. With the level of intricacy enabled by Stratasys PolyJet 3D printing, Hasco redesigned the screw with a reduced wall thickness and subsequently 3D printed a mold insert to the new specifications in order to test the integrity of the design before mass production.

Paulmann noted that using the Objet500, Hasco produced the parts of the cavity that shape the polymer – such as the inserts and slides – in just six hours compared to the 24 hours it previously took. Hasco then worked with prototyping specialists Canto Ing. GmbH, to finish the 3D printed inserts and test the sample mold. "We were delighted with the result," said Paulmann. "The first sealing screws were produced ready for mounting on our clamping unit in a record time of only four days."

Through the use of tired and tested standardized Hasco products and Stratasys state-of-the-art 3D printing, the project has proved that it is possible to implement this innovative rapid-technology application within the injection molding process. "For the production of low-volume prototypes in the final product material, the ability to quickly change molds with a 3D printed cavity offers a rapid, low-cost alternative to conventional methods," Paulmann adds.

2015/2016 Board of Directors
Mold Technologies Division
Society of Plastics Engineers, Inc.



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SPE Mold Technologies Division
November 22, 2015 Meeting Minutes

To: Board of Directors Mold Technologies Division SPE
From: Christina Fuges – Secretary to the Board
Subject: Minutes of the Meeting of the Board of Directors on 11-November-2015

	Present	Absent		Present	Absent
Glenn Starkey, Chair	X		Renee Nehls	X	
Scott Peters		X	Cyndi Kustush	X	
Wayne Hertlein	X		Brenda Clark		X
Vic Baez		X	Christina Fuges	X	
Barbara Arnold-Feret		X	Clare Goldsberry	X	
Greg Osborn	X		Pete Kambouris		X

The meeting was called to order by Division Chair – Glenn Starkey at 11:04am (CST). Division Chair presided over the meeting – Christina Fuges took the recorded minutes as the Secretary. Roll was taken according to the leadership roster:

Motion made to begin meeting.

Opening comments
Introductions of board members.

Division Chair Report – Glenn Starkey
Looking forward to a great event today at the SPI Moldmakers Trade Fair.

Chair Elect Report – Victor Baez
None

Division Secretary Report – Christina Fuges
No minutes to review: August 20, 2015 minutes were approved on September 9, 2015.

Treasurer's Report – Wayne Hertlein
Wayne, Cyndi and Glenn meeting on transition after Thanksgiving.

Filing tax return for switching division names.

Wayne reviewed Division finances.

- Checking account total =$40162.22
- Five investment accounts, renewal dates, and acct summaries =$89,396.04
- Mold Division Total: $129,558.26

ITQ Foundation
  - Total: $536.99 with Department of Michigan. In process of claiming (Wayne included earlier summary of transactions on claiming this account money.)
  - Invest account: $39,801.05
  - Total: $40,338.04

Total SPE MTD Net Worth: $169,896.30

TPC Report – Cyndi Kustush
Brenda transitioning to role.

ANTEC Update: Location and dates are Indianapolis May 23-25, 2016
- ANTEC monthly meetings have started and Brenda has attended every one.
- Ramping up for ANTEC authors/papers. The deadline for papers is 12/8/15.
- Call for Papers will be in the next Newsletter and is on ANTEC website, which also has guidelines and timeline for submissions.
- E-blasts going out to promote as well as using The Chain.
- Wayne met Pete and David from the Injection Molding Division. They are very interested in working with MTD for ANTEC for a joint session and a joint Mini Tech.
- Glenn suggested a half-day for MTD track and then we can connect with the IMD for a joint track.
- Wayne says a lot will depend on how the papers and abstracts come in
- Greg and Renee emphasized the changing role of mold designers and how they are the drivers of the mold, so they are our target attendee.
- MMT and Progressive will help promote ANTEC.
- Greg suggests SPE MTD business cards for promotion, marketing and networking opportunities.

Winzeler Gear Event on 11/4/15, Cyndi:
- A successful tour and dinner. Cyndi is working on photos and blog for MMT that she will update and pass onto Clare for newsletter.
- Glenn requests an eye out for Division activities that we can help promote and to which MTD can be a contributor.

Mike Koebel Western Moldmakers Trade Fair, **Christina**:
- 25-year anniversary, increased attendees and exhibitors.
- Send photos to Clare for newsletter coverage.

Mini Tech, Cyndi
- Flextronics fell through; now working on finding an OEM with tooling in-house in a well populated area and available in April. Send suggestions to Cyndi.
- Added suggestion is to partner with an Education night.

Division Councilor Report – Barbara Arnold-Feret
None

Membership Chair – Barbara Arnold-Feret
None

Sponsorship Chair Report – Pete Kambouris
- Glenn reported for Pete. We are up to date for current year, and Wayne is checking in with Pete on deposits.
- Pete and Glenn are meeting on sponsorship ideas.
- Glenn noted the focus is not on dollars, but on viability, connections and likely speaker opportunities at various events.

Newsletter Editor Report – Clare Goldsberry
Newsletter is now quarterly; on a "seasonal" schedule: Fall (Nov), Winter (Jan), which will include a call out for Mold Maker and Mold Designer of the Year nominations and Amerimold; Spring (Apr) and Summer (Jun). Goal is to shoot for the first month of the quarter delivery.

For the fall edition, Glenn's column is in and Clare is working on the rest. She is looking for trends and insights to share. The focus should be on what MTD is doing not really products and technology.

Awards Chair Report – Wayne Hertlein
- Wayne working on getting awards made and he'll work with Cyndi and Brenda on speaker awards.
- Scott is working on Fellow submissions for Ed Jenko. He is also working on the Honor Service Member Award with Vic. It was noted that we don't need to award this every year, but if a person is identified with a valid contribution and service to the industry, submit

the name to Wayne so he can verify if they qualify.
- Pinnacle Award recognizes MTD, so we want to submit. Barbara did it last year. It is typically done by the chair elect. Glenn with work with Barbara to locate a copy of what was filled out last year and send it to the Board for feedback.

Education Chair Report – Greg Osborn
- Grant letter and form approved, so we can submit to schools in the area. Reached out to Karen Norville for AMBA Chicago schools. Added to PCIC list of schools.
- It will be sent out in December with the second week of January deadline. Follow-up will take place in December and at the end of February the Award will be granted. The goal is the first quarter.
- Grants focused on post high school programs, community colleges and colleges.
- Three $2,500 scholarships with an additional $2,500 earmarked for kitty for more scholarship, as they come up.
- Idea: Work with Chicago/Milwaukee schools. A potential plant tour of a school program such as Waukesha Tech (WCTC). Renee noted that in April Milwaukee SPE secures a speaker and hosts their Education Night at WCTC with local companies exhibiting via table tops.

ITQ Chair Report – Wayne Hertlein

Wayne sent a summary and explained that he is working

on resurrecting the 501C and working on an exit or continuance strategy.

Old Business

- MoldMaking Matters video: postcard mailing went out in early fall and we've had approximately 1,000 hits on the video, but no call to action emails have be received yet (careers@moldmakingtechnology.com)
- Division trade show materials are completed and ready for the SPI Moldmakers Trade Fair (portable banner, logo, photo and mission statement, and materials).
- Booth and materials will be housed at Progressive.

New Business

We need to create a new Marketing Chair/position. Responsibilities will include Division logo giveaways (e.g., SPE MTD business cards; SPE MTD pens as thank you to speakers from Division; business card holder, little "trophy" for desk) and event booth coordination.

The new logo is being sent to group.

Next Meeting: TBD

Glenn calls for a motion adjourn the meeting. All in agreement. Meeting adjourned.

Respectfully submitted,
Christina Fuges, Secretary to the Board

HRSflow Opens New Production Plant in the U.S.

On September 23, Italian hot runner specialist HRSflow officially brought online its new U.S. production facility in Byron Center, MI. More than 200 guests attended the open house, along with Maurizo Bazzo, President and CEO INglass-HRSflow the parent company; President of the Society of the Plastics Industry Bill Carteaux; and Flavio Volpe, President of the Automotive Parts Manufacturers Association, Ontario, Canada.

With the new site, HRSflow now has a local production plant on the American continent. The facility has about 3,700-square meters of space, with separate areas for the production and assembly of the hot runner systems, a goods warehouse, a room for routing quality control, offices, and other rooms for the social infrastructure, said HRSflow.

The new Michigan facility will serve primarily the U.S. and Canadian markets we well as Central and South America. The company also has a facility at its headquarters in San Polo di Piave, Italy; and one in Hangzhou, China.

"At all of these plants we have the same machines and equipment, and all the processes for planning, construction and production of our hot runners is identical. By doing this we ensure that we can offer our customers the same high product quality with absolute reliability on all three continents," said Maurizo Bazzo during the opening ceremony. "At the same time, we are extremely flexible. Should a capacity bottleneck occur at one site, we can easily work off the backlog of orders at one of our other two plants."

Alco Announced $60 Million 3D Manufacturing Expansion at Western Pennsylvania Tech Center

Alcoa is spending $60 million to expand its 3D manufacturing capabilities at a technical center in the Pittsburgh suburbs. Alcoa announced the expansion at its Upper Burrell Township center, along with the company's new Ampliforge process, which uses 3D printers to design and produce parts, which are then finished using traditional processes such as forging.

3D printing is a manufacturing process in which three-dimensional products are designed on a computer then printed out of layered materials – for example, metals and plastics – into one product. The process is especially important in aerospace and transportation products, because complicated shapes and designs can be produced in one step and marketed more quickly.

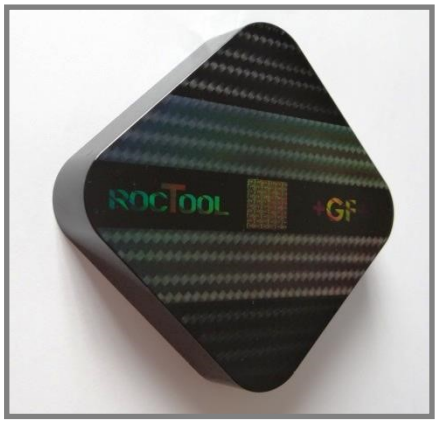
The products made at the technology center about 25 miles northeast of Pittsburgh won't be sold to customers, but the technology developed there will shape 3D processes used in other Alcoa plants. The researchers will be trying to develop metallic powders that are used in the 3D process, with an eye toward reducing the cost and time it takes to make 3D products.

Alcoa recently bought RTi International Metals in Moon Township, another Pittsburgh suburb, for $1.5 billion. That acquisition gave Alcoa the ability to print 3D products out of titanium and other specialty materials.

RocTool's Variotherm Inductive Technology Showcased at Fakuma

RocTool, specializing in the design and development of technologies for rapid molding of composites and plastic injection components, presented their latest technologies at the recent Fakuma trade show, in Friedrichshafen, Germany, with live demonstrations with KraussMaffei.

RocTool demonstrated that the company's high-performance technologies offer "real answers" to surface quality, temperature control, energy usage and fast cycle times to produce parts with excellent surface quality in a single stage directly from the mold. "The German market has seen continuous growth since 2010. RocTool's Variotherm Inductive Technology provides the best dynamic heating solution available today, offering solutions for high mold surface replication and part cost reduction with quality improvement," explained Stefan Sonnhalter, Business Development Manager at RocTool GmbH. "The live demonstrations that are organized during the Fakuma trade show, in partnership with and on the stand of KraussMaffei will provide tangible evidence of this."



The parts produced will combine high-gloss effects and holographic textures coming from a technology unique to GF Machining Solutions. The mold is equipped with Incoe's hot runner system, which ties in with Schofer's focus on mold making to ensure optimal surface quality and Oerlikon Balzers' long lasting, deeper, mirror polish effect using their Balitherm Primeform treatment.

With no need for additional film technology, RocTool offers new design options for premium quality parts directly from the mold, thus eliminating finishing stages. Additionally, in partnership with KraussMaffei, RocTool demonstrated that it is possible to combine highly aesthetic qualities that are in high demand. These molds also allow for a high level of replication of the mold surface thanks to an efficient heating and cooling process.

"Someone is sitting in the shade today because someone planted a tree a long time ago."

Warren Buffett

New “Cool 3” Cutting Fluid Maximizes Efficiency and Reduces Workplace Pollution

With its new water-soluble Cool 3 cutting fluid, Buehler – ITW meets the demand for a highly efficient and at the same time ecofriendly coolant / lubricant for use in production.

The new Cool 3 cutting fluid, with its new water-soluble formula, ensures the efficient removal of heat and particles, and provides high environmental compatibility for sectoring of metals, plastics and ceramics.

The transparent high-performance cutting fluid features a novel boron-free formula without mineral and synthetic oils, and has a pleasant smell which avoids negative impact on the health and well-being of laboratory and production staff, the company states.

At a recommended concentration of 4% to 8% in water, Cool 3 is suited to all milling and grinding tasks encountered in a variety of machine shop environments and for a wide range of ferrous and non-ferrous metals., plastics and composite materials. Cool 3’s high stability offers a long useful life in recirculating cooling systems, thus reducing costs. The coolant/lubricant prevents corrosion and helps to maintain the high quality of your chucks without leaving a sticky residue.

Cool 3 is available in containers of 1 and 10 liters and is compatible with all abrasive wheels used on abrasive cutters from the AbrasiMet, AbrasiMatic and Delta series, as well as the IsoMet and PetroThin precision cutters and with the new PlanarMet 300 bench-top planar grinding machine.

Additionally, Cool 3 is suitable for use with other Buehler products used in sample preparation, such as AddiCool, an additive specifically designed to prevent galvanic corrosion of non-ferrous metals, or the anti-bacterial system cleaner RediClean. Third-party instruments may also benefit from the advantages offered by Cool 3.

Tomorrow's Toolmaker

Tomorrow's toolmaker will be more than just someone who can make a mold to print. Tomorrow's toolmaker will be innovative; someone who can provide the most optimum solutions to the most vexing mold/molding problems.

Everywhere I go, people tell me that they look to the mold makers to be innovative and creative in coming with new solutions to old problems. OEMs want to know and understand the latest technology that will reduce cycle time (latest in mold steels, aluminum molds, conformal cooling, etc.), eliminate secondary operations (in-mold operations, molding cells replete with automation), and maximize production.

Most mold companies put a lot of time and effort into designing and building the best mold possible for the application required. But the push is on to be even better. Mold makers must understand molding, materials, cooling, in-mold labeling and decorating, automation and much more. If you want to be "Tomorrow's Toolmaker" and be part of a healthy, profitable and growing industry you will need to be much more than just a mold maker. You'll have to be a "molding solutions provider." Are you ready?

~ Clare Goldsberry

Newsletter Sponsorship

The SPE Mold Technologies Division Newsletter is now issued four times a year to over 1500 members worldwide. Readership is 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:

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Publication Release Dates

Fall Issue
November 2015

Winter Issue
January 2016

Spring Issue
April 2016

Summer Issue
June 2016

SPONSORSHIP RATES

Size	Yearly Rate	Per Issue
1/10 page (2h x 3.5w biz card)	$250	$90
1/4 page (4.75h x 3.5w)	$625	$225
1/2 page (4.75h x 7.25w)	$1,250	$450
Full page (9.75h x 7.25w)	$2,500	$900

Preferred output: Electronic transfer (BMP, TIFF, PCX, JPEG, PDF)

The Mold Technologies Division Board of Directors is in need of a ***"Few Good Men and Women."***

If you are interested in the continued betterment of our industry around the globe, and would like to be a part of the leadership within the Mold Technologies Division, then we have a place for you!

Please add your name to the form below and return via e-mail to **gs@procomps.com.**

SPE® MOLD TECHNOLOGIES DIVISION

Name:_____

Mold Maker:_____ Mold Designer:_____ Both:_____

Phone:_____

Mobile:_____

E-Mail:_____