Mold Technologies Division

Division of Society of Plastics Engineers

Volume 38, Issue 1, Quarter 1 2017

Message from the Chair

The First Quarter of the new year was an active time for your SPE Mold Technologies Division! Here are some highlights to look back on:

The Board met in January, and one item we've taken on is to update our Division Bylaws. Directors are further advancing within their roles, and we're increasing our connectivity with scheduled connections between the Executive Board. Not real glitzy aspects, but needed to keep our house in order.

Then, February brought preparation for March's "Technical Tour". Our Division launched this initiative, and then led a collaboration with the American Mold Builders Association (AMBA) Chicago Chapter. We reached our maximum number of attendees, not only from the

Chicago area, but from Wisconsin and Michigan also. We toured A-1 Tool, and the entire evening was well regarded by attendees. See photos inside this Issue, and look for more SPE MTD Technical Tours in the future.

Requests have been sent for submitting grants. Each year, our Division budgets for four \$2500 grants to be given to support trade related programs. Surprisingly, we're always in need of grant submissions, so if you know of a program doing good things, please connect them with Greg Osborn, Educational Chair.

Next up? Antec! Our Annual Technical Conference is in Anaheim, California, May 8-10. Much work has been done by Brenda Clark and her team to review papers, book speaker slots, and now make preparations for a successful program. Also, at Antec we will be receiving the SPE Silver Pinnacle Award, which is a rewarding step towards our further development as a Division.

Our Division works to deliver technical programs, as well as provide industry support. If this combination of efforts interests you, please drop a line to myself or Chair Elect Brenda Clark to discuss how you might be able to assist the cause in the future. The new year for the SPE begins this July 1, and the work ahead needs volunteers ahead as well.



Glenn Starkey

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A Message from the Newsletter Editor

I attended the Leadership Summit of the PLASTICS (SPI) Machinery and Mold Makers Division that met in Phoenix recently, and the primary focus was workforce issues, particularly the challenges of four generations of workers. For the first time in history, it was noted by the leader of the first session, John W. "Buddy" Hobart of Solutions 21, we have four generations in the workforce and a fifth generation getting ready to enter.

Many years ago I had a mold shop owner tell me that owning his business would be a great thing if he didn't have to have employees. I can sort of understand that. It's easy to buy and implement new machinery and equipment, but hiring, training and retaining topnotch employees is a difficult task for companies. It's being made more difficult by the new culture that the Gen X-ers and Gen Y (aka The Millennials) people are introducing into the work place.



Clare Goldsberry SPE Mold Technologies Division 2016/2017 Newsletter Editor

It's particularly difficult for the oldest generation, many of who continue to operate their mold making companies – they are called "Traditionalists." Hobart said that out of the 44 million in this age group (1922-1945), 7 million are still in the workforce, primarily because people are living longer and the recession slowed retirement plans.

We all know the Baby Boomer generation (1946-1964) that used to be the largest generation (78 million) ever until the Millennials came along. The Gen Xer's numbered about 40 million (1965-1979), but then came the Gen Y – the Millennials, born 1980-1998 – which number 80 million. All four of these generations are now in the work place and the challenge is how these different generations hear and understand each other. And that's a big challenge.

Hobart said that for the Traditionalists, work is an obligation, a sacrifice so these people respect hard work and authority, and as for work and family life: "never the twain shall meet," Hobart said. To the Baby

Boomers, work is an exciting adventure and this group became the workaholics who didn't get much feedback but they like money, titles and recognition. Additionally, the Baby Boomers have no balance: they live to work.

The Gen X-ers want challenge and flexibility in the work place, but they are self-reliant, want structure and direction. They also challenge convention and find new and better ways of doing things. They may even push back a bit and want to know why a Traditionalist boss wants something done a certain way, but Hobart reminded the attendees, they're not questioning your authority as the "boss" – they truly want

DIVISION HOTLINE

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

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

Brenda Clark Accepts Chair Elect Position for the SPE Mold Technologies Division

We are proud to announce that Brenda Clark, Engineering Manager for HASCO America, has accepted the Chair Elect nomination for the SPE Mold Technologies Division. Brenda's tireless participation on the MTD Board has been greatly appreciated and we're glad she's staying the course in this new position.

"I am looking forward to the year ahead and working with the current board," Brenda said. "It is already setting up to be quite an impressive group to continue on into 2017-2018.

"While I will not be trying to reinvent the wheel, or mold in our case, there are several ideas already brewing up in my mind. I'm sure there are many members who have great ideas as well to contribute. I'm inviting you to join our division's board of directors, or just drop us a note via The Chain or SPE Website should you like to assist further. We are gearing up for a busy ANTEC 2017 in



Anaheim, California. I hope to see you all there May 8-10."

Message from the Newsletter Editor (continued from page 2)

to know why you do things the way you do. So tell them! More importantly, the Gen X-ers want work/ family life balance NOW! They're not willing to wait until they're 65 to go off in the RV and have fun.

For the Gen Y people, work is a means to an end. "They work to live not live to work," Hobart said. "Their motivation to work is different. They're good at multi-tasking and have a lot of tenacity. They want balance and flexibility in their work and family life so that everything fits."

Hobart said that your "Leadership Brand" is critical to hiring and retaining the Millennial generation. "People join your company, people quit you," he reminded the audience. "Be fair which means that everybody is treated as their situation allows. Practice Intentional Leadership. The key to 21st century leadership is coaching, so hone your coaching abilities. A good coach doesn't have to be better than their employees or know more. The job of a good coach is to make your players better."

Clare Goldsberry, Editor

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Mold Technologies Division TECH TOUR

The Mold Technologies Division held a TECH TOUR on Wednesday, March 8, at A-1 Tool Corp in Melrose Park, IL. A group from the MTD toured A-1's shop and A-1 invited their preferred partners as sponsors to speak to machine tool technology,





cutting tool technology, steels, components, hot runner systems, and CAD/CAM technology. These suppliers set up kiosks and were available to speak to attendees who enjoyed an evening of good food and great networking.









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 INFORMATION

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Glenn Starkey Division Chair Progressive Components Glenn.Starkey@procomps.com

SPE Mold Technologies Division Wins Silver Pinnacle Award!

The SPE Mold Technologies Division (MTD) has been awarded the Silver Pinnacle Award. The Pinnacle Award was established in 2005 to recognize Sections and Divisions that successfully create and deliver member value during the year. There are four categories of achievement on which the Sections and Divisions are rated: organization, technical programming, membership and communication. The SPE will officially recognize the Mold Technologies Division during the Society's 75th Annual Technical Conference (ANTEC 2017) in Anaheim, CA on Sunday afternoon, May 7th at 12:30 pm at the Hilton Anaheim, during the Leadership Recognition Reception.

Introducing UNIFY™ Manifold System

Husky's new UNIFY[™] manifold system is pre-wired and pre-assembled with hydraulic valve gate actuators for simple, quick installation into your mold. The UltraSeal design keeps the nozzles aligned to the mold gate in cold condition, at operating temperature and anywhere in between. UNIFY[™] manifold systems save you time and effort during installation and provide the same leakproof performance as all Husky Hot Runners.

New Alignment Locks for Large Molds

Progressive Components announces its new Z-Series Inserted Bar Locks, designed for mold weights from 25,000 to 75,000 lbs.

Progressive's Inserted Bar Locks allow mold designers and molders to select off-the-shelf components for alignment of large molds. Inserted Bar Locks deliver the maximum amount of guidance and support for the minimum amount of machining required. Long-term, precision registration of plates, is achieved when utilizing Progressive's Z-Series proprietary treatment, radial ramp lead-in geometry, and particle rings on the plate surface.

"When preparing this size range, early response from those who build large molds has been great", states Ken Rumore, Progressive Components' engineering manager. "Those who build small to medium sized tools have a world of options for alignment, but for automotive and appliance tools, mold builders have been forced to make locks custom."

The Inserted Bar Lock is the largest, standard

alignment lock in the industry, and the off-theshelf availability eliminates in-house design and manufacturing. For more information visit <u>www.procomps.com</u> or call 1-800-269-6653.

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As a manufacturer of high precision, complex tooling, Steve Rotman, President of Ameritech Die & Mold, aligns with engineering-focused suppliers that drive innovation and exceed expectations.

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SPE Mold Technologies Division March 17, 2017 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 17-March 2017

	Present	Absent		Present	Absent
Glenn Starkey, Chair	Х		Renee Nehls	Х	
Brenda Clark	Х		Clare Goldsberry		Х
Wayne Hertlein		Х	Jay Fidorra	Х	
Christina Fuges	Х		Rocky Huber	Х	
Greg Osborn	Х		Brandon Hough	Х	
Cyndi Kustush	Х		Richard Martin		Х
Kathy Schacht	Х				

1:36pm CST meeting called to order

Division Chair Report – Glenn Starkey

BOD Roles

Brenda put together the 2017/2018 Board of Directors proposal. She is finalizing some roles, and then will send it out to Board for review. We will then do an email vote.

Division Bylaws

The latest Division Bylaws have been reviewed against the SPE's template for division bylaws. They are mostly in sync, but some areas were modified. Renee noted some comments. She will mark up her suggested changes and send to Glenn.

- Article 2 Under purposes, we need to put in Mold Design/Designers, mold materials, etc.
- Page 2, election of interim; remove "interim"?
- Page 4, Section 3, B, confused about "b"; Glenn will take a look at template to confirm.
- Lowercase Mold Design, as Mold Technologies is the new division name.
- Glenn will circulate template to board for review

and comparison.

• We will bring to a vote at next meeting.

Chair Elect Report – Brenda Clark Nominations/Elections – Timing for 2017/2018

- Brenda has reached all board members and they have accepted. Now determining the roles. Email vote to come soon.
- Glenn verifying who from the board will be up for re-election.

Division Goals – Pinnacle Award schedule

- SPE MTD submitted application on time for Award and our division won the Silver Pinnacle Award that will be presented at ANTEC.
- Revamping these applications and changing requirements are coming and will be announced at ANTEC.

MoldMaker /Mold Designer of the Year status

- Wayne has received a couple applicants. Note: they do not have to be SPE members to win.
- MoldMaking Technology will blog about the Call for Candidates, deadline is May 15th. Will be awarded at Amerimold.

Division Secretary Report – Christina Fuges

• Minutes from 13JAN17 were sent and approved.

Treasurer's Report – Wayne Hertlein

- Checking balance total is: \$29,665.78
- Mold Technologies Div Total \$119,116.44
- ITQ Foundation Total \$40,407.90, Wayne still sorting out the ITQ IRS matter. Meeting with a local accountant has been moved to Amerimold timeframe.
- Mold Technologies Div Net Worth \$159,524.34

Mini Tech Report / TPC Report – Brenda Clark (Jay, Brandon, Rocky, Renee & Rich) TPC/ANTEC 2017 (May 10) Report

• Twelve papers in our session on Monday. Glenn moderating. Keynote is Jim Mitchell from Wittman-Battenfeld speaking on Industry 4.0.

 Brenda needs to know who will be in attendance, so she can schedule next Board/business meeting at ANTEC and put in a room request (and have teleconference). Glenn, Cyndi, Renee and Jay will be there. Brenda advised attending board members to register, book hotel, etc.

Technical Tour (Greg, Glenn)

- Had the SPE MTD and AMBA-sponsored A-1 Tech Tour with about 63 people, 53 moldmakers, processors and 13 sponsors. Went very well. Tour followed by food and social hour. It also raised money for the AMBA Chicago to have a tabletop CNC machine for career fairs. Now know how to replicate in the future.
- AMBA seemed interested in working closer with SPE MTD
- Brenda asking for list of sponsors to list here.

Speakers Bureau

 This is an excel document that Brenda has for speaker leads when we need them. This will be passed onto Rocky Huber who will be taking the lead on the TPC tasks coming up.

Division Councilor Report – Cyndi Kustush

- Recently attended a remote meeting.
- Met candidates running for leadership positions for SPE national.
- Voting will take place at ANTEC. She is attending Councilor activities prior to ANTEC.

Membership Chair – Rich Martin

- Rich noticed discrepancy between membership numbers (January 563, March 518).
- Glenn verifies Rich needs to go by the tableau report: March 518 members.

Sponsorship Chair Report – Renee Nehls

Sponsorship/collections status

• A couple more sponsors have paid and money

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has been deposited. We are pursuing sponsorship for 2017-2018 year. PDF is updated and will be distributed to the Board to share. She will add the specs for ads to the PDF. EPS, PDF, AI files will work. Glenn requested a list of current sponsors to be attached to minutes.

- Renee is working on collecting from the current, and selling new sponsors.
- Brandon, has interested sponsors. Requesting an email form that can go to Renee for follow-up. He will connect with Renee directly.

Newsletter Editor Report – Clare Goldsberry

 Clare has materials for next edition, Will need chair and chair-elect reports. Will go out ASAP.

Awards Chair Report – Wayne Hertlein

 Brenda will have 5x7 Award plaques for ANTEC speakers, Glenn/Jackie to update Wayne with a proposed new approach.

Education Chair Report – Greg Osborn

Grant Status

- Greg noted 140 applications were sent out last year and to date he has sent out 60 and received four back, and they are the same organizations as last year.
- He is sending a follow-up email as reminder that deadline has passed and we are extending it to May timeframe.

Division Marketing – Rich Martin/Glenn Starkey

- Amerimold update: SPE MTD has a 10 x 10 booth #600. It is in a good location and Cyndi is working out scheduling for booth coverage.
- Moulding Expo Stuttgart: no progress in relationship in terms of presentations/speakers.
- Brenda suggested "Ask me about SPE MTD" plaques for members to display when their companies are exhibiting at any relevant trade

shows to promote membership and build out speaker bureau.

• Run of shirts going and mobile mini magnifiers are available to use when at relevant events.

New Business

- Renee mentioned the annual Milwaukee SPE education event at WCTC on April 18th where SPE MTD handed out three \$250 scholarships last year. She is requesting \$750 from the SPE MTD scholarship fund to hand out this year and stressed it would be specified that money goes to students at WCTC in the tool and die program.
- Greg explained that we have four budgeted \$2,500 grants. For which we pick three from the grant submissions and keep one as a lastminute request. We can award up to \$2,500 for the 2017 year for students in a SPE local chapter that is involved in a mold making or mold design related educational program. If a local section has this type of scholarship program he would like the Grant Request form he emailed to the Board on 3/17/17 to be filled out with a description of the program at the school and how your local chapter distributed the funds and emailed to him for follow-up.
- Brenda suggested putting a call out in The Chain to see what other divisions are interested along as it is for moldmaking and mold design programs.

Next Meeting:

Tentative: April 10th (CST)

Tuesday, May 9th at 9am (Pacific) for Meeting at ANTEC

Motion to adjourn the meeting at 2:54pm CST. Jay first. Seconded by Renee. All in favor. Respectfully submitted,

Christina Fuges, Secretary to the Board

HRSflow New Hot Runner Solutions

HRSflow's new Three Layer Tip, Pressure Block and Thread Safe Kit is the latest of the company's innovative solutions to optimize injection molding processing, while simplifying routine maintenance of hot runner systems. The Three Layer Tip is a coating-free tip made of three materials, one of which is a copper bushing internal to the flow channel to improve thermal conductivity. The new design provides increased temperature at the gate thereby improving processing of materials such as glass-filled fiber.

The Pressure Block is made with low heat conductible materials positioned between the hot runner system and the mold which increases the clamp plate stiffness under load, and at the same time provides an optimal thermal profile along the whole hot runner system, critical for

HRSflow's new Three Layer Tip, Pressure Block and Thread Safe Kit is the latest of the company's innovative solutions to optimize injection molding processing, while simplifying routine maintenance of hot runner systems.

ensuring the quality of the finished part.

The new Thread Safe Kit provides optimization of the injection molding process and simplifies the routing maintenance. A special bushing positioned between nozzle and manifold provides easy nozzle removal without thread damage when processing materials such as PMMA and PC.

www.hrsflow.com

Upcoming Industry Events

SPE ANTEC

May 8-10, 2017 Hilton Anaheim Anaheim, California www.4spe.org

IMLCON/IMDCON

May 18-19, 2017 Sheraton Reston Hotel Reston, Virginia <u>www.awa-bv.com</u>

Plastics In Motion June 4-7, 2017 Detroit Marriott Troy Troy, Michigan www.executive-conference.com

Amerimold Expo June 14-15, 2017 Donald E. Stephens Convention Center Rosemont, Illinois www.amerimoldexpo.com

In-Mold Decorating Symposium June 18-20, 2017 Lincolnshire Marriott Resort Lincolnshire, Illinois www.imdassociation.com For more industry event listings and links to additional informa-

tion please visit the SPE website at <u>www.4spe.org/Events</u>

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RocTool Study Demonstrates Key Advantages of Mold Heating and Cooling Technologies

RocTool, a developer of mold heating and cooling technologies, has conducted a study to identify a range of resin materials that successfully use RocTool's molding technologies to produce highquality parts with high flow and reduced cavity pressure. The study is part of the company's ongoing effort to further develop its HD Plastics material database which is designed to help designers and converters to achieve exceptional part quality and increased performance without secondary operations such as painting or decorative films. The database is available to RocTool Process users.

Working in conjunction with RJG Inc., a Traverse City, MIbased leader in injection molding technology, RocTool was able to demonstrate the advantages of its technologies including flow improvement, reduced cavity pressure, high surface replication of the mold, and significant gloss improvement. One of the main challenges in the plastics industry is reducing overall part thickness. The flow increase with RocTool induction heating technology delivers design opportunities and pushes the limits in creating thin-wall applications.

RocTool developed a specific spiral mold to calculate the flow length while pressure sensors were implemented by RJF to assess the capability of RocTool technology to improve mold filling and reduce the drop of pressure. The spiral mold was developed with variable thickness (from 0.5 mm to 1.5 mm) allowing a complete material characterization .RJG's process monitoring eDart System collected

Conventional

RocTool

Flow length improvement up to 100% with PEI (thickness 1.5mm)

the data from the sensors which were implemented behind the ejector pin and located close to the gate at the end of the fill.

"The partnership project provided added value in our ongo-

Headquartered in Fraser, Michigan and with company roots dating back to 1950, PCS Company manufactures and distributes mold components, mold bases, hot runner products, and molding supplies for the plastic injection and die casting industries. Our customers include plastic injection molders, mold makers, mold designers, and die casters throughout North America.

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Fax: 800-505-3299

ing characterization of resins for the HD Plastics™ material database," said Mathieu Boulanger, RocTool CEO. The company is evaluating a range of resins from various material suppliers. Roc-Tool is now capable of demonstrating the additional benefits of its technology beyond just a cosmetic advantage. RocTool can provide true comparison data for parts produced with RocTool technologies versus those made via conventional injection molding. "This information can be very useful and will provide designers with expanded options," said Boulanger. "We can now bring this unique data directly to the OEM."

This first study includes six resins covering commodity, premium, and performance catego-

Flow length improvement at injection pressure and thickness defined (1000 bar / 1.5 mm)

ries. Depending on the material, the evaluation revealed that RocTool's molding technologies can double the flow length (see graph above).

RocTool has now characterized many materials for inclusion in its HD Plastics material database. The company will continue to broaden its material database, evaluating not only targeted commodity resins but also high-performance resins and ultra-polymers. The database will be available on the HD Plastics web site by Q3 2017.

(www.roctool.com)

teamnork support decision strategy ethic vision integrity **Leadership** contribution communication motivation influence responsibility Planning management

"A good leader is not the person who does things right, but the person who finds the right things to do.."

Anthony T. Dadavano

Muesburger's Newest Products

Due to the countless variants which are offered on the market, the selection and configuration of the appropriate hydraulic cylinder is very timeconsuming and difficult which can also affect lead times. New in the Meusburger range is the extension of the hydraulic cylinders E 7000, E 7001 and E 7002, and are now available from stock with a stroke of up to 200 mm. A specific characteristic of the double-acting hydraulic cylinders from Meusburger are the standard axial and transverse holes. The piston rods are hardened and ground and therefore offer optimal protection against damages and leaks. All Meusburger hydraulic cylinders are equipped with FKM (Viton) seals enabling operating temperatures of up to 180oC. Also the matching accessories such as couplers, magnetic proximity sensors for position monitoring and available for download immediately, whereby the stroke is directly entered in the digital catalogues and then transferred to the appropriate CAD program.

The new E 65620 Magnetic proximity sensor from Meusburger is equipped with a new setting aid: the flashing signal threshold alarm and continuous light in the optimal switching range guarantee an exact

and simple adjustment. Also the existing E 6562 Magnetic proximity sensor which in addition is equipped with a connector was upgraded with this new function. Both sensors from Meusburger are ideally suited for the position sensing of hydraulic cylinders. The fixing of the magnetic proximity sensors takes place in the T-groove. Both variants are coordinated to be the tried and trusted Meusburger E7020 Compact cylinder and guarantee higher process reliability.

The E 2766 Magnetic cable retainer is the Meusburger's solution for easy and secure fixing of the connecting leads inside the cable slot. For incorporating the cable retainer, only a milling cutter with a diameter of 12 mm is required, sparing the user the time-consuming task of introducing a threaded hole. The retainer is fixed by means of a strong Neodymium magnet. This helps save time and costs during mold assembly. Due to their temperature resistance of up to 150oC the magnetic cable retainers can also be used for hot runner systems. These are also available from stock.

(www.muesburger.com)

New Technology Corner

3D printing or "additive manufacturing" as it is also called, continues its fast-track in manufacturing as the technology becomes more viable for end-use parts, both in metal and plastic. However, metal 3D printing is out in the front with the aerospace/ aircraft, automotive and medical industries, and machine tool companies are stepping up to the plate to capture market share and the excitement about the possibilities of metal 3D printing.

In December, Mazak announced its Hybrid Multi -Tasking machine technology with the introduction of its new Integrex i-200S AM (Additive Manufacturing). With an innovative multi-laser deposition system, the machine provides both additive and subtractive capabilities that allow shops to turn, mill and drill, in addition to building part features and perform laser marking all on the same machine and in a single setup for Done-In-One production. The Ingtegrex i-200S AM features dual laser cladding heads/ additive manufacturing nozzles that provide options for both high and fine rates of metal deposition.

Mazak also announced the Variaxis j-600AM Vertical Machining Center that features an innovative Wire Arc-type metal deposition system. Mazak claims that the technology the additive process to who new levels in terms of speed, allowing to quickly and easily grow part feature then employ the machine's advanced 5-axis multi-surface subtractive capabilities to produce high-precision parts (including mold cores/cavities) complete in single setups.

Hurco demonstrated its 3D Print Head Adapter for CNC machines at the IMTS show last fall that gives Hurco vertical machining centers the ability to

transform their WinMax part programs to a 3D printed rapid prototype by extruding plastic PLA filament. Hurco says that the New 3D Print Head takes commercial desktop 3D printing technology to the next level allowing users to take full advantage of the size of the machining center. The portable accessory is powered and controlled by spindle rotation so there are no wires to install, and it can easily be moved to other Hurco machining centers within a shop.

With large OEMs such as General Electric Aviation and Moog investing heavily in 3D technology, particularly metal 3D printing, suppliers to OEMs in various industries need to understand what customers want and be ready to adapt and adopt the 3D technology to the mold manufacturing business. 3D printing has a lot of value add and with the machine tool companies stepping up with their Hybrid additive/subtractive machines, it could be the next big thing for mold makers.

SPE Injection Molding Division's Conformal Cooling Conference

The use of conformal cooled mold inserts are finally going mainstream. Conformal cooled mold inserts have been successfully manufactured in Europe for over 25 years. For 25 years, Europe has enjoyed molds that have reduced cycle time by 20% to 40%, reduced rejects and produced stronger parts because of reduced molded-in-stress.

Conformal cooled mold inserts have been a stealth technology. Every time a conformal cooled mold was built, everybody that anything to do with the project was (and still is) required to sign a Non-Disclosure agreement. This has given Europe a competitive financial advantage for a very long time.

The following representative products were made from vacuum brazed conformal cooled mold inserts; automotive lift seat panel; blood transfusion filter; automotive B-pillar exterior trim; automotive center console; headlight bezel; automotive engine cover; automotive door panels; and aerosol spray caps, and were successfully supplied to Europe's major automotive, medical and packaging

On May 16-17, the Conformal Cooling Conference will be held in Minneapolis, MN. Contura will be one of the speakers, coming from Europe, to share the applications and the results that they have had with their technology. For the first time ever in North America, Dr. Jan Pfieffer from PVA Lot - und Werkstofftechnik GmbH (Germany), will give a technical presentation on both vacuum brazing and diffusion bonding (which have been a very secretive technology till now) in regards to conformal cooled inserts. Additionally, two speakers from Poland will give presentations on a new diagnostic and maintenance machine for conformal molds and another presentation on combining simulation techniques with thermovision.

Millions of dollars are pouring into R&D for additive manufacturing processes. We're seeing the results of this research in the many companies that are building additive manufacturing machines. OEM's, molders and moldmakers now have many choices and methods for building conformal cooled molds.

Dr. Dan Thoma, Director of the Grainger Institute For Engineering, University of Wisconsin - Madison, will give a talk entitled "Metal Additive Manufacturing: Strengths, Weaknesses, & Opportunities".

However, taking on a project for building a conformal cooled mold, is like a three legged stool. The 1st leg is the design and simulation work, the 2nd leg is the manufacture of the mold inserts, and the 3rd leg is the running of the mold. The failure of any one leg, causes the project to fail. Simulation software only displays results for what the designer entered. To get the most out of the technology, the designer optimally would have a knowledge of Fluid Mechanics and Dynamic Heat Transfer, so that he would have the knowledge of cause and effect when he changed something. Conformal cooling has opened up the freedom of design that we never had before. The old rule of thumbs does not necessarily apply. Jeff Higgins from Moldflow will present the does and don'ts of designing for this technology. The goal of this conference is to take the secrecy lid off of this technology in order to provide technology for our industry to compete on the global market. To continue the conversation, attend the Conformal Cooling Conference on May 16-17, 2017, in Minneapolis. Four speakers from Europe, 3 PhD's plus others to answer any and all questions.

The DLC coating is a metal-free, diamond-like carbon layer that is deposited by the PACVD. DLC coating option now a standard on ejectors, 2 Stage ejectors, Latch locks, guide pillars, guide blocks (side locks).

- Can be run without grease
- Reduces friction
- Increases surface hardness
- Increases wear resistance
- Increase corrosion resistance

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plastics mold tooling.

Today, RoyAlloyTM Stainless steel has become the preferred steel of choice, accounting for more than 70% of all pre-hardened stainless mold base plates sold in North America. RoyAlloyTM demonstrates significant improvements in all areas,

with features including enhanced machinability, improved stability, greater toughness, better weldability, and more consistent uniformity and hardness when compared with 420F.

Edro Specialty Steels, Inc. California - Pennsylvania, U.S.A. West: 800.368.3376 East & Midwest: 888.368.3376 Appenweier, Germany Tel +49 (0) 7805 91579-0 email: royalloy@edro.com www.edro.com

DME Introduces New Conformal Cooling Solution

Milacron Holdings Corp. announced that its DME product brand that makes mold components, molding supplies and industrial supplies, has partnered with Linear AMB (a Moog Company) to offer metal 3D printed conformal cooling products to help improve productivity in the molding industry.

TruCool is the new DME line of products designed to help moldmakers and molders with their mold cooling. DME's Conformal Cooling solutions utilizing a cutting edge, direct metal laser melting 3D printing process to produce highly complex cavities, cores, and components with conformal cooling channels. The process achieves shapes, paths, and channel geometries impossible to obtain with conventional tooling.

"We build the unmachineable," said David Baucus, DME Product Manager. "The Conformal Cooling solution places cooling channels at the optimal distance from the mold surface, consistently following the geometric shape of any mold insert for any customer part, allowing the mold to maintain a targeted, consistent temperature that allows for complete thermal control with cooling times reduced up to 100 percent. This technology also allows for conformal venting solutions for those hard-to-reach areas of trapped gases, when requested by the molder."

The DME TruCool Conformal Cooling solution starts with a detailed review of the moldmakers and/or molders' requirements and with the use of advanced 3D CAD modeling and F.E.A. software the DME technology team can simulate the most life-like and optimized cooling channels. The result allows for complex cooling channels with greater overall coverage, even distribution of cooling and the ability to provide individual insert temperature control.

The moldmaker receives their Conformal Cooling (and/or venting) optimized mold cavity or core according to the specification of their 3D model with a hardness up to 56 HRC with an additional +.025" rough metal to allow them to finish the cavity or core's part surface to their own specifications. Every Conformal Cooling solution is material, flow and pressure tested to ensure quality, each time, before shipment.

With DME's TruCool Conformal Cooling solutions, molders will benefit from significant cycle time reduction, complete and isolated thermal control, significant quality improvements, less scrap, increased flexibility in waterline designs and the ability visualize flow capabilities and thermal properties.

(www.milacron.com)

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:

Clare Goldsberry, Newsletter Editor 602-996-6499 | clarewrite@aol.com

Renee Nehls, Sponsorship Chair262-509-4165 | renee.nehls@mgsmfg.com

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- · Company logo displayed at SPE events

Publication Release Dates

> Fall Issue November 2016

Winter Issue February 2017

> Spring Issue April 2017

Summer Issue June 2017

Ad Specs: 9.75" H x 7.25" W

Ad Specs: 4.75" H x 7.25" W

Ad Specs: 4.75" H x 3.5" W

Ad Specs: 2" H x 3.5" W

CALL FOR CANDIDATES SPE MOLD TECHNOLOGIES DIVISION

Mold Maker and Mold Designer of the Year 2017 Award

Every year, the Society of Plastics Engineers Mold Technologies Division recognizes both a Mold Maker and a Mold Designer, who have made significant contributions to their profession, and have supported and advanced the industry.

Anyone may submit a candidate to be considered for either of these two prestigious honors, and the recipient need not be an SPE Member. To submit a candidate for consideration, please fill out your contact information, along with the contact information for the award candidate. Please identify the award that you are submitting the candidate for, be it the Mold Maker of the Year, or the Mold Designer of the Year.

Also, please include information on the candidate (bio, description of accomplishments, etc.) to explain why you feel that your candidate should receive the respective award.

Your contact information:

Full Name:	
Mailing Address:	
Phone Number:	
Email Address:	
Please indicate wl	nich award applies to the candidate <i>(check the box that applies)</i> : the Year 2017
Mold Designer	of the Year 2017
Please note that ir making and mold	n some cases, a candidate can be suitable for consideration for either award if their background is in both mold design.
Contact informat	ion for award candidate:
Full Name:	
Mailing Address:	
Phone Number:	
Email Address:	

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

Send Nominations To:

Wayne Hertlein: wayneh7758@aol.com