

APRIL 2025

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April 7, 2025, 5:30-8pm;
The Gazebo Banquet Center, Warren, MI
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Aluminum Giga Castings in Automobiles

Aluminum giga castings are increasingly used in automobiles, particularly in electric vehicles for light-weighting and manufacturing cost reduction. As most of them are structural components subject to both quasi-static and dynamic loading, the quality and quantifiable performance of the aluminum giga castings is critical to their success in both design and manufacturing. This talk will review applications of aluminum giga castings in automotive industry and outline their advantages and benefits as well as challenges. Factors affecting quality, microstructure, and mechanical properties of the aluminum giga castings will also be evaluated and discussed.

Speaker Bio: Qigui Wang, is a Technical Fellow and Innovation Lead at Advanced Materials Technology & Virtualization group of General Motors, with over 40 years' experience in metal casting, alloy development, material properties, virtual casting, and integrated computational materials engineering. In addition to his reasonability of developing advanced materials technologies and computational tools, Qigui leads several federal funded projects including two awarded over \$15M from US Department of Energy to develop Low Mass and High Efficiency Medium-Duty Truck Engine and Ultra-Conductive Composites (UCC) for Advanced Electric Motors. Qigui is a fellow of The Minerals, Metals & Materials Society (TMS), American Society of Metals (ASM), and Society for Automotive Engineers (SAE). He serves on several technical, industrial, and editorial boards. He has co-authored 206 papers, 108 patents, 136 trade secrets and 27 defensive publications. He has received numerous awards and honors including GM's highest technical innovation Boss Kettering Award, American Foundry Society Ray Witt Award and Howard Taylor Award, SAE Arch Colwell Merit Award, and R&D 100 Award. Qigui received his B.S. and M.S. in Metallurgical Engineering from Southeast University in China and PhD in Materials Engineering from the University of Queensland in Australia. Prior to joining GM in March 2000, Qigui worked as a postdoctoral researcher at Worcester Polytechnic Institute for over 3 years and a faculty member at Southeast University for over 10 years.



Speaker
Qigui Wang
Advanced
Material
Technology &
Virtualization
General Motors



Tech Chair
Jason Coryell
Advanced
Material
Technology &
Virtualization
General Motors

Save the Date

ASM Detroit and DWAFS Golf Outing!

Get ready for an incredible day of golf at Fellows Creek in Canton, MI, on Friday, August 8th, 2025! Whether you're a seasoned golfer or just starting out, this event is perfect for everyone. Picture yourself on the lush green fairways under sunny skies, hearing the satisfying crack of clubs connecting with golf balls. While it might be hard to imagine such a warm and sunny day right now, this summer event will be the perfect antidote to the winter chill. So, mark your calendars and start counting down to an unforgettable day on the greens. We can't wait to see you! (See registration form on page 8.)

ASM Detroit & DWAFS Joint Meeting Monday, April 7, 2025

Speaker: Dr. Qigui Wang, GM

Topic: Gigacasting

Location: The Gazebo Banquet Center, Warren

Social Hour 5:30pm • Dinner 6:30pm

Announcements 7pm • Speaker 7:15 – 8pm

\$20 a person with a Reservation (\$5 for Students)

For reservations e-mail to AsmDetroitChapter@gmail.com before Thursday, April 3rd.

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Chair's Note

Believe it or not, only two Chapter technical meetings remain for the 2024-2025 term. But first, let's recap the technical meeting held on March 10, 2025. We met at the Engineering Society of Detroit Building in Southfield, where we acknowledged the Chapter's fifteen sustaining members (yes, 15!) and nine student attendees. A big thank you to Solar Atmospheres for sponsoring the Social Hour! Following dinner, Chris Jones from Cleveland Cliffs delivered an excellent talk on electric steels (E-steels). He provided an engaging overview of the history of E-steels, and provided just the right mix on current scientific advancements, manufacturing processes, and material applications.

Now, on to April. This month, we have a joint ASM/AFS meeting scheduled for April 7, one week earlier than usual. The meeting will take place at the Gazebo Banquet Center near GM's Technical Center in Warren, where GM's own Dr. Qiqui Wang will present on gigacasting. While "gigacasting" have often been associated with Tesla, GM acquired one of Tesla's key gigacasting suppliers in 2023 and I'm excited to hear Dr. Wang share the latest developments in gigacasting and GM's related activities. Additionally, we will announce the Chapter's 2025 Student Scholarship winners during this meeting.

Looking ahead to May, Dr. Donald Cohen (Don) will present the Woodside Lecture, titled "Adventures from 30+ Years of 3D Surface Texture Measurement and Analysis," or as Don would say when he quotes Wolfgang Pauli, "God made the bulk; the surface was invented by the Devil." For those unfamiliar with tribology or component surface analysis, this meeting is a must-attend. It's fascinating, and critical, to get a glimpse and start to understand how important surface properties can be.

Lastly, we are always seeking enthusiastic individuals to help lead us into the future. If you are interested in supporting and promoting education in the field of materials, please don't hesitate to reach out. You can find me at the next meeting or email me at harper@darrowmustafa.com to learn more about how you can get involved.

Looking forward to seeing you at the next meeting!

Saturday, April 12 from 7:30 AM to 4:30 PM Clarkston Maker Girl Mania STEM Event

THERE WILL BE TWO SESSIONS WITH OVER 600 GIRLS AGES K THRU 7TH GRADE:

Session 1: 9:00 AM to 12:00 PM (please arrive by 8:30 AM for hands on training)

Session 2: 1:00 PM to 4:00 PM (please arrive by 12:30 PM for hands on training)

The event is being held at the Clarkston High School, 6093 Flemings Lake Rd. in Clarkston, 48346. From the north get off I75 at exit 91 (M15) and turn right. Turn left at Clarkston Road (first light) and then at the next light take a right toward the school. Take the second drive (to pull up in front of the building to unload the equipment and the third drive for parking. Enter the cafeteria through the glass doors to the left of the main doors.

They will provide pizza for volunteers, but feel free to bring/grab anything for your own snacks/lunch. Bring your safety glasses and wear shoes that will not slide on their waxed tile floor.

Maker Girl Mania is a day where girls from kindergarten through 7th grade come together and become artists, coders, inventors, makers and builders and metal casters.

For details, please contact: Susan Manyen at smanyen@comcast.net

ASM Detroit Chapter 2024-2025 Program

April 7, 2025

ASM Detroit and DWAFA Joint Meeting

Dr. Qigui Wang, GM
"Gigacasting"

The Gazebo Banquet Center, Warren

May 12, 2025

Woodside Lecture

Donald K. Cohen, PhD
Michigan Metrology, LLC

"God made the bulk; the surface was
invented by the devil." (Wolfgang Pauli)
*Adventures from 30+ years of 3D surface
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August 8, 2025

ASM Detroit and DWAFA Golf Outing

Fellows Creek, Canton, Michigan



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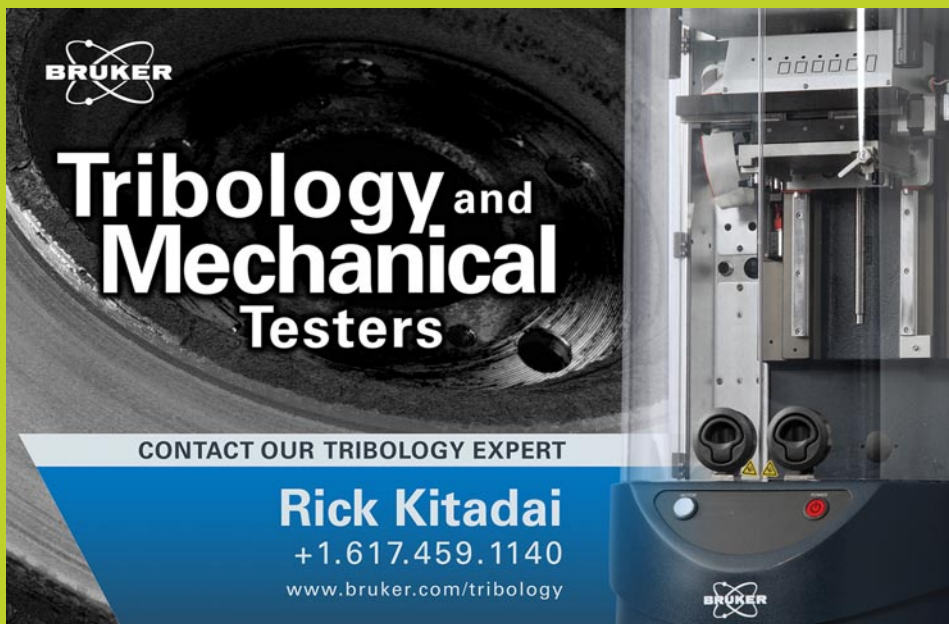
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March 10th Meeting



Thanks to all of the ASM Detroit Sustaining Members that attended our March 10th Meeting: From LtoR: Yi Liu (GM), Angella Sell (Aalberts Surface Technologies), David Sponseller (Omni Metals), Levi Pietila (AFC Holcroft), Maxwell Mayhew (Element), Carl Boehlert (Michigan State), Joe Butchart (Allied High Tech), Samuel Meyer(Weldaloy), Dan Hill (Gasbarre Thermal Processing), Andrew Wilder (Surface Combustion), Mike Blazejewski (Dubois), Don Cohen (Michigan Metrology), Chris Mollencupp (Solar Atmospheres), Eric McCarty (Auto/Steel Partnership) and Mark Harper (Darrow Mustafa).



We had nine students attend our March 10th dinner. Thanks to Fluxtrol for their continued support and sponsoring the student's dinners!

*Thanks to our March 10th Speaker, Christopher Jones!
From LtoR: Mark Harper, PhD (24-25 Chapter Chair),
Christopher Jones, PhD (Cleveland Cliffs), Maxwell
Mayhew (March 10th Tech Chair), and Jonathan
Goettsch (24-25 DWAfS Chair)*



2024-2025 ASM Detroit Chapter STEM Outreach Sponsor!



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Thanks to Fluxtrol's generous donation we are able to offset the dinner cost at our monthly chapter dinner meetings for our STEM Outreach attendees. These attendees include: Teacher Scholarship Winners, University Scholarship Winners, Community College Scholarship Winners, Metro Detroit Science Fair Winners, and ESD Future City Winners.

College and university students can also attend our ASM Detroit Chapter dinner meetings for just \$5 thanks to this generous donation!

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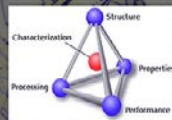
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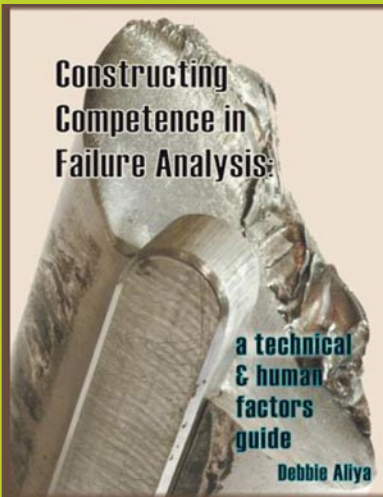
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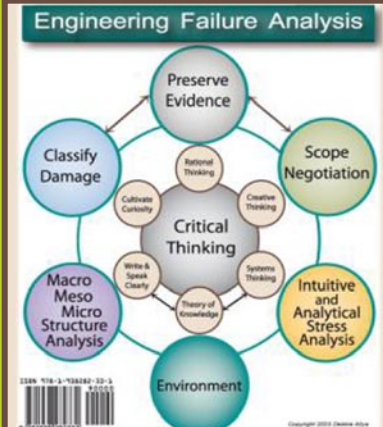
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ASM Detroit Chapter & AFS Detroit/Windsor Chapter



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ASM and AFS have a rich history in supporting the following: Provide scholarships to university students; Promoting career fairs, science fairs and ASM's annual Teacher's Camp; Visits to middle schools to encourage science and math careers.

Annual Golf Outing Friday, August 8, 2025

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