Aluminum Alloys and Vehicle Lightweighting

Applying vehicle lightweighting is a major focus in meeting 2025 CAFE requirements. The use of aluminum alloys in particular has been identified as one of the most cost efficient methods of reducing weight in vehicles. Aluminum extrusions offer structural solutions for body-in-white applications that are strength and/or energy absorption critical. Extrusions offer flexibility in design change relative to cost, speed and ease to implement. Current alloy choices and future developments extend beyond Aluminum Association guidelines and offer a wide range of performance capabilities. These characteristics of aluminum extrusion will be reviewed to demonstrate why aluminum extrusions have become a material of choice for vehicle lightweighting.

David Lukasak, PhD is the Director of Metallurgy and Research for Sapa Extrusion North America. Lukasak is responsible for metallurgical practices and alloy development across Sapa’s 23 plants in the Americas. Lukasak has over 25 years of experience in the aluminum industry ranging from R&D to production management. His primary expertise lies within the physical metallurgy of aluminum alloys and understanding the effects of microstructure on mechanical and corrosion behavior. Specific areas of experience include alloy development for automotive, aerospace and machining alloys where Lukasak holds several patents.

Lukasak holds a Bachelor of Science degree in Metallurgical Engineering from Michigan Technological University, a Masters of Science degree in Materials Science and Engineering from the Pennsylvania State University and a PhD in Materials Science and Engineering from the Pennsylvania State University.

Volunteers needed for Southeast Michigan Science and Engineering Festival

Detroit ASM members are invited to share hands-on materials science demonstrations at the Schoolcraft College Science and Engineering Festival. Volunteers are needed from 8:00 A.M. to 2:30 PM. on Friday October 28th and 9:00 A.M. to 4:00 PM. on Saturday, October 29th at Schoolcraft College in Livonia. Up to 2000 middle school students will visit about 150 hands-on activities in 2 hour sessions on Friday, and the same activities are open to the public on Saturday. You can volunteer for an hour, for both days in full, or for any combination between the two. Please RSVP to Peg Jones at peggy.jones@gm.com. The festival is anchored by an amazing group of Michigan Tech students who travel all over presenting hands-on science activities. You can get a preview at http://mindtrekkers.mtu.edu/

Dinner Meeting

Monday, October 3, 2016 • 5:30 – 8:00 P.M.
Speaker: Dr. David Lukasak    Venue: Livonia Marriott
17100 Laurel Park Drive, Livonia, MI 48152

Social Hour: 5:30 pm • Dinner: 6:30 pm • Announcements: 7 pm • Speaker: 7:15 to 8 pm
$30 with Reservation; $35 No Reservation/Non-Members; $25 Retirees/Unemployed; $5 Students.
For reservations contact the Chapter Office at 586-944-5656 or e-mail to asmdetroitchapter@gmail.com before Friday, September 30th.
A Message from JP

As this summer winds up, I hope it leaves you all with some good memories, whether it be a trip to a Tiger’s game, a visit to the Detroit Zoo, a barbecue with friends in your backyard or something more adventurous. For me, it has been a few fishing trips this year to some of the gorgeous Michigan lakes. A trip to Lake St. Clair fetched me Michigan DNR’s 2016 Master Angler award for a Smallmouth Bass!

Whatever your memory of this fine summer, we hope you are now charged to come back and be part of your professional family at ASM Detroit. First, I want to welcome all the new members who have joined our Chapter. At our upcoming monthly meetings, we will be welcoming ASM Teacher Camp awardees, who are building a grass-root level interest in materials sciences in our schools. We will also have a pleasure of inviting winners of national scholarships to our first Chapter monthly meeting. Next year, we will be hosting student winners of the Future City Competition and Detroit Science Fair to honor and encourage these students. The theme for our first Chapter talk in October should attract folks from a diverse diaspora of our membership, who may want to come in and listen to the new possibilities of extruded aluminum as it tries to make headway into the steel dominated automotive vehicle structures.

As we kick off with an impressively laid out Chapter Program for this year, the key to our success is participation and involvement of our membership. I thank you all for your volunteer spirit and look forward to your seeing you at our various events throughout the year.

2016-2017 Chapter Program Dates & Locations

October 3, 2016
Chapter Dinner Meeting, Livonia Marriott, Livonia. Speaker: Dr. Lukasak, Director of Metallurgy and Research at Sapa Extrusion North America

November 14, 2016

February 13, 2017
Membership Awards Night, Lafayette Grande Banquet Facility, Pontiac

March 13, 2017
Sustaining Members Night, Farina’s Banquet Center, Berkely

April 10, 2017
ASM/AFS Joint Meeting – The Dearborn Inn, Dearborn

May 8, 2017
Woodside Lecture, The Gazebo Banquet Facility, Warren

Volunteer Opportunities
Contact Julie at asmdetroitchapter@gmail.com if you would like to volunteer for one of the following events.

- Oct. 28-29, 2016
  Schoolcraft College Science and Engineering Festival, Schoolcraft College Gym, Livonia

- Monday, January 30, 2017
  Future Cities Judging Day

- Wednesday, March 15, 2017
  Science Fair Judging Day
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ASM Detroit Chapter Awards
Six Teacher Scholars for Promoting Materials In The Classroom

As part of its Student Outreach Program, the ASM Detroit Chapter has created the Teacher Scholar Program to assist Materials Camp alumni in demonstrating Materials Science to their students. The Scholar Award consists of a $250.00 grant to the teacher to be used for the purchase of equipment and supplies needed to perform materials-related experiments.

The ASM-Detroit Chapter is proud to announce our third class of Teacher Scholars; they are:

- Wanda Bryant (Henderson Academy, Detroit) – Kathy Hayrynen Scholar
- Laura Moore (Hartland HS) – Peggy Jones Scholar
- Richard Cole Northville HS) – Detroit Chapter Scholar
- Karen Forsyth (Bemis Jr. HS, Utica, MI) – Detroit Chapter Scholar
- Julia Hall (Mifflin HS, Worthington, OH) – Detroit Chapter Scholar
- Chika Hampton (Kalamazoo Area Math & Science Center) – Detroit Chapter Scholar

Their intended uses of the grants include the purchase of materials for studying phase transformations and copper crystal growth to casting Tin/Bi alloys.

The Chapter is also proud to name two of the Scholarships for Dr. Kathy Hayrynen and Dr. Peg Jones. Both ladies have greatly contributed to the formation, organization, and operation of the Materials Camp for Teachers in Ann Arbor for many years. In recognition of their extra effort and time given, the named Scholars are presented to the two teachers that are most determined to aid their students.

All of our recipients attended the Year 2 Materials Camp this past July in Ann Arbor, MI. This is for teachers that attended the Year 1 camp, put that experience into practice, and found that it worked so well they wished to return for additional training. The Ann Arbor camp drew teachers from a multitude of locations, including two from Brazil.

Because of the Year 2 Camp, we have two winners from outside our chapter area. Both teach in school districts with many challenges. The scholarship committee agreed that they should also be rewarded for their dedication to their students with a grant.

The ASM Detroit Chapter is proud of its Teacher Scholars and of our chapter members, who contribute to make such grants possible.

Technical & Community College Scholarships

ASM International is proud to announce the Technical & Community College Scholarships, a nationwide scholarship program for students who are attending technical or community colleges. The scholarships have been created through the generosity of several past ASM Presidents, including Ray Decker. Ray and his wife Mary are longtime members of the ASM-Detroit Chapter and supporters of education. Each scholarship is for $500 and is awarded based on academic merit, a personal essay, recommendation letters, and financial need. To be eligible for this scholarship, the applicant needed to be formally enrolled in an Associate’s Program in Metallurgy, Materials Science, Manufacturing, or Welding/Joining, and have taken and passed at least an entry-level class in Metallurgy or Materials Science.

The ASM Detroit Chapter is very fortunate that three of the four scholarship winners are from our area. Congratulations to the three winners:

Ms. Jessica Considine
Mr. Spenser Foerg
Ms. Michelle Riley
The ASM Detroit Chapter Would Like to Thank Its Sustaining Members for Their Continued Support!

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