Engineered Materials of Recycled and Bio-Renewable Resources

ASM-Detroit is pleased to welcome Dr. Rajan Eadara, Vice President of Research & Development, Polymer Group at Diversified Chemical Technologies on Monday, February 13th as our guest speaker.

The 21st century automotive industry demands quality components and competitive pricing. This applies equally to the supply of high performance seals and gaskets. In the current era, it is desirable to incorporate post-consumer recycled materials and bio-renewable feedstock to the greatest extent possible.

Energy use and cycle times are important criteria in the manufacturing process. Manufactured in Detroit, Michigan using production equipment manufactured in Michigan and exported to over 15 countries throughout the world, these HVAC seals approved by all major automobile manufacturers are used on over 38 vehicle platforms. Polyurethane foam gaskets offer significant advantages over competitive materials such as vulcanized EPDM. The energy use in manufacturing is significantly reduced. The curatives used in EPDM are often highly toxic. Part weights may be reduced significantly by about 30-40 percent.

Many competitive products are imported into the USA. Recognizing the need to incorporate a significant annually bio-renewable content, along with post consumer recycled rubber, a novel chemistry was developed meeting these criteria. Soy based polyol and corn based chain extenders have been combined along with finely ground recycled rubber from scrap tires and incorporated into the polymer matrix to compose of 40% of the finished part weight. HVAC seals are currently produced at the RPM Detroit Michigan factory. This technology has been shown to be production feasible and commercially viable, meeting the stringent specifications of the automotive industry. Already millions of parts have already been supplied to the global automotive manufacturers.

Dr. Eadara holds a Ph.D. in Polymer Chemistry from the University of Detroit, an M.E. from U of D in Chemical Engineering, and M.S. in Polymer Chemistry from the University of Aston, Birmingham, UK, a BTech in Chemical Engineering & Coatings from the University of Kanpur (IIT), India and a B.S. in Physical & Chemical Sciences from the University of Andhra, India. In addition, Dr. Eadara holds several patents and publications and is a member of American Chemical Society, American Institute of Chemical Engineers and the Society of Plastics Engineers.

Meeting: Monday, February 13, 2012

Venue: Vladimir's
28125 Grand River Ave., Farmington Hills

For reservations contact the Chapter Office at: (586) 573-0700 or email to AsmDetroitChapter@gmail.com before Friday, January 6th.

5:45 p.m. Social Hour • 6:30 p.m. Dinner • 7:30 p.m. Speaker
$25 with Reservation; $30 Non-Members/No Reservation; $20 Retirees/Unemployed; $5 Students
Chairman’s Message

I would like to thank everyone who attended our first chapter meeting in 2012. Our typical January attendance is low, but this year approximately 60 people were in attendance to hear Dr. James Boileau (Ford Motor Company and ASM-Detroit Attendance/Public Relations Committee Chairman) deliver a great talk on understanding CAFE standards and the challenges facing OEMs to meet them. I think the underlying message is that mixed material strategies will need to be implemented by most OEMs to meet tougher CAFE standards in the future. On behalf of the attendees, members, and Executive Committee I would like to thank Severstal NA for serving as the social hour sponsor for the evening.

The ASM-Chapter has a lot to look forward to for the remainder of the year. Our February meeting will be held on Monday, February 13th, when Dr. Rajan Eadar, Vice President of Research for Recycled Polymeric Materials, who will speak about a company success story in the city of Detroit. The meeting will take place the day before Valentine’s Day, so we encourage you to bring your friends, spouses, and significant others to Vladimir’s to hear about the latest in recycled polymers. In March, we will be hosting a short ½ day seminar on thermal spray technology and applications by the ASM International President, Dr. Christopher Berndt. See additional details in the Micro Examiner, but please do your part in cascading our announcements to those who might be interested in attending. The seminar will be followed by our general membership meeting as we will host our National Officers Night. The chapter is looking forward to reintroducing education as a service to our membership, at the lowest possible rate to you or your employers.

I would like to extend an invitation out to the general membership to volunteer to serve on a small five (5) person Nominating Committee to solicit the general membership and your peers to develop the ballot for the election of our future Committee Chairpersons and Officers. The time commitment is minimal, and most of the work can be accomplished via email and/or phone. Also, if you are willing to lead a committee, please see me at an upcoming chapter meeting for additional details.

On behalf of the ASM-Detroit Chapter, I would like to apologize for the mishap that occurred with last month’s Micro Examiner mailing. If the name on your address label is not correct for the February edition, please contact Caryn at asm.detroitchapter@gmail.com.

Have an enjoyable Valentine’s Day, and we look forward to seeing you at an upcoming meeting. If you have any suggestions/concerns/questions regarding your ASM membership experience, please feel free to contact me at chairman@asm-detroit.org.

Jason Coryell
ASM-Detroit Chapter Chair
Materials Engineering, General Motors

Jason Coryell
Special Thanks to Our January Social Hour Sponsor

SEVERSTAL DEARBORN, INC.

Severstal Dearborn is one of the legendary steelmaking facilities in the world, with roots to the earliest days of automotive manufacturing. Through the years, our Dearborn facility has been at the center of steel innovation and performance improvement. Today, our vision for our Dearborn facility is laser-sharp. Our investment in modernization will ensure it remains one of the leading steel producers in the world, capable of meeting the most critical requirements and demanding applications for tomorrow’s automotive and OEM customers. This modernization features a new, five-stand, six-high, 72” tandem cold mill linked to a pickle line and a new, exposed hot-dipped galvanizing line. Total output will be increased to 2.1 million tons per year.

Careers at SNA represent a unique and real opportunity for the future for those individuals seeking challenges and rewards in a team environment. The SNA team is a part of a global steel producer operating in the heart of the North American automotive industry. We are continuously working on exciting steelmaking technologies and are building world class facilities capable of meeting the future product requirements of steel users worldwide.
ASM Detroit Scholarship Deadline Extended

ASM-Detroit has extended our scholarship deadline to Friday, March 2, 2012. Scholarship winners will be notified by March 31, 2012. The awards will be presented at an ASM Detroit Chapter meeting to be determined.

ASM-Detroit is offering three scholarships, totaling $3,500, this year:

The Marion Semchyshen Freshman Scholarship, for $1000, is to encourage outstanding Michigan high school students to choose metallurgy or materials science as their field of study in college.

The Sustaining Members Meritorious Scholarship, for $1000, is to recognize an ASM student chapter member with a good scholastic record and extracurricular activity in metallurgy or materials science.

The James A. Mansfield, for $1500, is given in recognition and support of outstanding scholastic achievement in pursuit of a metallurgical or materials science degree.

For more information on ASM Detroit’s scholarships, and the application process, visit http://www.asmisternational.org/portal/site/detroit/Outreach/Scholarship/.
Volunteers Needed

On again, our Young Members/Student Affairs committee will be participating in the annual Engineering and Science Fair of Metro Detroit. The event will be held Wednesday, March 15th at Cobo Hall. Judges are needed for ASM awards during the morning session. Judges would need to be there around 7:30 a.m. There is also an afternoon session, and judges are also needed for that. If you are interested in volunteering to be a judge, please email Bradley Hall at asmfordetroit.scholarship@gmail.com.

ASM-Detroit is also soliciting members who are willing to join the Yearbook Committee. The committee will be chaired by Susan Hartfield-Wunsch, current Secretary, along with Caryn Ruzich, Chapter Administrator. We will be publishing a three-year edition this year, covering the 2010 through 2012 chapter year(s). Most responsibilities will be handled by phone and email. If you can offer some spare time to this publication, please contact Caryn at the chapter office.

ASM Detroit has a new website address:

asminternational.org/portal/site/detroit

To contact Caryn Ruzich: AsmDetroitChapter@gmail.com
"THERMAL SPRAY TECHNOLOGY"

On March 7th, the Detroit Chapter of ASM presents a half day seminar on Thermal Spray to be conducted by the honorable Dr. Christopher Berndt (2011 ASM President, Professor of Surface Science and Interface Engineering at Swinburne University of Technology). This seminar will be immediately followed by the ASM Technical Meeting.

COURSE CONTENT AND BROAD OBJECTIVE
The objective of this half-day course is to introduce thermal spray (TS) processing technology and processes for protecting and enhancing surfaces for industrial applications. The principal attribute of this novel technique lies in its capability of producing tailorable properties of coatings by optimizing the nature of the substrate, the material to be deposited and the process design parameters for diverse applications. An interactive session based on real-life case studies will illustrate the potential of TS processes and thermal spray coatings (TSCs) and focus on the problems and future challenges of the TS technology.

COURSE OUTLINE
1. Introduction to Thermal Spray: Includes (i) a historical perspective, (ii) TS process variants, (iii) company and literature resources, (iv) physical models that help understanding the processes.

2. Applications for Thermal Spray: Includes (i) specific applications for various industrial sectors, (ii) designing components and structures for TS application, (iii) coating considerations, (iv) comparison with other coating and overlay techniques.

WHO SHOULD ATTEND
Managers, technopreneurs, product development and design engineers, product marketers, scientists, lecturers and students who want to understand TSCs for protecting and enhancing product surfaces for diverse applications.

WHEN: Wednesday, March 7, 2012
TIME: Thermal Spray Seminar: 1:00 – 5:00 PM EDT
       Technical Meeting/Dinner: 5:00 – 8:00 PM EDT
LOCATION: Vladimir’s
          28125 Grand River Avenue
          Farmington Hills, Michigan 48336

Note: The Detroit Chapter ASM Technical Meeting will follow this seminar.

COST: Pricing includes the Technical Meeting, Social Hour & Dinner:
      $15 for students
      $50 for ASM Members
      $60 for non-ASM Members

Reservations are required: E-mail Caryn Ruzich at asmdetroitchapter@gmail.com or contact the chapter office at (586) 573-0700 by March 2nd. Payment should be mailed to ASM-Detroit Chapter, POB 1398, Warren, MI 48090-1398. For more information contact Eric McCarty at 248.520.3009 or eric.mccarty1@comcast.net.

Christopher C. Berndt
Christopher C. Berndt, Ph.D., is the Professor of Surface Science and Interface Engineering at Swinburne University of Technology and is a faculty member of the Engineering and Industrial Sciences.

Chris Berndt graduated in 1977 with a Bachelor of Applied Science degree in Metallurgy, from what is now called the University of South Australia. His Ph.D. was earned in the Materials Engineering Department of Monash University in mid-1981. He undertook several Fellowships in the USA in the early 1980’s; which included a 2 year stint at NASA-Lewis Research Center in Cleveland (OH-USA) where he worked on aerospace hardware.

Dr. Berndt’s career is marked by notable stays at Monash, Stoney Brook University, NY, James Cook University, Queensland, and Swinburne University of Technology. He is a Member of more than 10 professional societies in the materials, mechanical, manufacturing and bioengineering fields with professional interests that gravitate around manufacturing; especially in the area of protective coatings. Among his many accomplishments are the following.

• President of Thermal Spray Society (2002 - 2004)
• Chair or Co-Chair of 5 International Conferences.
• Trustee (the Board of Directors) of ASM International (2005 - 2008)
• President of the Australian Ceramic Society (mid-2008 – mid-2010)
• Inducted into the Thermal Spray Hall of Fame (2007).
• Vice-President of ASM International in 2010 and progressed to President in October 2011.

Dr. Berndt has in excess of 400 publications. He is the Editor / Co-editor of 10 conference proceedings on thermal spray. Berndt has an ‘h-index’ of 31 and more than 3,200 citations to his work. He is especially proud of his students and post docs who have achieved professional prominence and good lives over the past 30 years.
Calendar of Events

February 13, 2012
Dr. Rajan K. Eadara
VP, R & D, Diversified Chemical Technologies
Vladimir’s – Farmington Hills

March 7, 2012 (WEDNESDAY)
EDUCATIONAL SEMINAR
“Thermal Spray Technologies”
1:00 p.m. – 5:00 p.m.
Presented by Dr. Christopher Berndt,
ASM Int’l President
Vladimir’s – Farmington Hills

TECHNICAL MEETING
5:00 p.m. – 8:00 p.m.
Dr. Christopher Berndt
ASM International President
Vladimir’s – Farmington Hills

April 9, 2012
Annual Woodside Lecture
Honoree – TBA
Vladimir’s – Farmington Hills

May 10, 2012
Joint AFS/AFS Meeting
Bob Lutz
Location TBA
2011-2012 ASM-Detroit Chapter

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Vice Chairman: Philip Huber
Secretary: Susan Hartfield-Wunsch
Treasurer: Thomas Mackie
Chapter Administrator: Caryn Ruzich

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