



Edmonton Chapter News

February Technical Dinner Meeting Recap

Patrick Lysz
Chapter Chair

On February 27, 2014, Ana Benz of IRISNDT presented "Failures of Reinforced Polymer and Piping Components" to 35 attendees. The presentation focused on polymer materials, which are not frequently discussed in Alberta. Polymers are a major part of our everyday lives but we tend to not think of them as suitable for high performance industrial applications. Ana presented a few representative and interesting failures from her time at IRISNDT and she discussed some of the differences in conducting a failure analysis on these materials when compared to steels. The presentation very valuable and enjoyed by all who attended.



ASM Edmonton Vice-Chair James Derksen thanking Ana Benz

In addition to Ana's presentation, Emma Wolodko shared some of her experiences from the ASM Materials Camp in Cleveland, Ohio. Materials Camp is hosted every year by ASM International, and Edmonton sponsors a local grade 11-12 student to attend. Emma told the audience about conducting a failure analysis on a carriage bolt with a group of students and two mentor engineers.



Emma Wolodko sharing her experiences at the Cleveland Materials Camp

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There was also a presentation (see Awards segment) from 8 University of Alberta students who ASM Edmonton funded to attend TMS 2014 in San Diego.

If you have any questions about Student Camp, ASM travel bursaries or any other topics please contact your local chapter at ASM.Edmonton@gmail.com.

Educational Seminar

Educational Seminar Recap Amanda Schneck

On February 28, 2014, the ASM Edmonton Chapter welcomed Dr. Iain Le May to give a one-day educational seminar on failure analysis. With several years in industry, numerous papers, and an endless list of stories and experiences to share, Dr. Le May captivated the group with his informal, anecdotal presentation style. Attendees learned some of the fundamental points to remember when performing failure analysis and were introduced to several interesting case studies that Dr. Le May had worked on over the course of his career. He stressed the importance of drawing on other experts in an investigation and using a team of specialized people to discover the cause of a failure. He poignantly reminded us all, "If you are outside your area of expertise, you are inside your area of ignorance."



The 2014 Educational Seminar Participants



Dr. Iain Le May discussing the fundamentals of failure analysis

March Events

Joint AWS/ASM Technical Dinner Meeting

The upcoming joint AWS/ASM dinner meeting features William Lenling, who will be speaking on *The Use of Thermal Spray Coatings in the Oil and Gas Industry*.

Abstract:

Components used in the oil & gas industries can encounter severe conditions of wear, mechanical forces, and corrosion. Thermal spray coatings are extensively used by this industry to provide

Upcoming Events

2013-2014 Events

Thurs, Mar 27th – Technical Dinner Meeting
Topic: Thermal Spraying
Speaker: ASM Trustee Bill Lenling
Location: U of A Faculty Club

Thurs, Apr 24th – Technical Dinner Meeting
Topic: TBA
Speaker: TBA
Location: U of A Faculty Club

Fri, May 9th – Yellowhead Brewery Tour
Location: Yellowhead Brewery

Thurs, Jun 5th – Annual General Meeting
Location: U of A Faculty Club

Chapter Sustaining Members

Please take a moment to visit the websites of our chapter sustaining members

[Altasteel Ltd.](#)
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2013-2014 ASM Edmonton Executive

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added performance for many components. This talk will describe the processes of thermal spray and the differences between them. Metallographic cross sections of some coatings will be shown and described, along with descriptions of good and bad attributes of the different coating types. Coatings produced by HVOF, (high velocity oxy-fuel), plasma, electric arc spray, and flame sprayed and fused coatings that are metallurgically bonded will be presented. Industrial applications in where coatings are used today will be shown with an emphasis on oil & gas applications. Some advance coatings under development for potential oil & gas applications will also be discussed along with examples of how coatings can be tested and qualified in the lab before being placed in the field.

About the Speaker:

William is a co-founder (1992), materials engineer and President of Thermal Spray Technologies, Inc., in Sun Prairie, Wisconsin, which engineers and manufactures industrial coatings and coated components. His work has resulted in many unique applications, including dielectric, high temperature, corrosion, and wear resistant specialty components. Recently much of his work has concentrated on developing new coating materials for the oil & gas industry. In late 2010 Mr. Lenling also became President of Lineage Alloys of Baytown, TX, which manufactures carbide powders used by the thermal spray industry. He has published several technical papers and has a variety of patents. William has a B.S. and M.S. in Metallurgical Engineering from the University of Wisconsin –Madison, (1985 and 1986). He has been very active in the ASM Thermal Spray Society (TSS), he is an ASM Fellow, and is a current trustee of the ASM Board.

Dates and Times:

Date: Thurs, March, 27, 2014
Registration: 6:00 PM
Dinner: 6:30 PM
Technical Program 7:30 PM
Location: University of Alberta Faculty Club

RSVP by March 25th, 2014 to asm.edmonton@gmail.com

Costs:

Students: \$10
Professional Members: \$25
Non-Members \$35

Payment can be made by cash or cheque. If you would like to pay by credit card, there will be a nominal fee of \$1.50 to cover processing cost. For more details regarding this payment option please contact us at asm.edmonton@gmail.com

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Feedback

The ASM Edmonton Executive is continually working to improve this newsletter in order to better serve our members. If you have any suggestions or comments regarding the newsletter or if you would like anything included please contact us [here](#).

Awards

ASM Edmonton Student Travel Grant Nancy Manchak and the 2013/4 Travel Grant Recipients.

Every year ASM Edmonton funds local students to attend materials-related conferences. This year, a group of 8 Materials Engineering Students from the U of A joined over 4000 materials engineering professionals at TMS 2014 in San Diego, California. The group participated in a variety of events, including a team of four students competing in the Materials Bowl Trivia Challenge.

The annual challenge allows students from across North America to compete in Materials Engineering jeopardy before a live audience. The U of A team won their first round in a close match against McMaster University and the University of British Columbia but lost in the semi-finals to the eventual champions, the University of Florida. Attendees also attended the annual Women in Science and Engineering Breakfast and technical programming sessions throughout the week. A highlight of the trip was for the group to see University of Alberta Professor, Dr. Hani Henein, introduced as the 2014 TMS President. Dr. Henein looks to strengthen mentorship opportunities for young professionals in materials engineering and extend international relations during his term as President.



Five of the University of Alberta students sharing their experiences at TMS



ASM Edmonton Executive members with the group of University of Alberta students

Trivia

Poisson's Ratio is an important materials property that relates axial to lateral deformation. In most cases the Poisson's Ratio is positive and has a value less than one; however, some materials do have a negative value. What is a material that has a negative Poisson's Ratio?

(Courtesy of John Nychka)

Trivia Answers

Dacron - a polymer made in such a way to achieve a foam structure that expands laterally outward when put in tension. This is typically used in bio-implants.

Source: US patent 428/131.