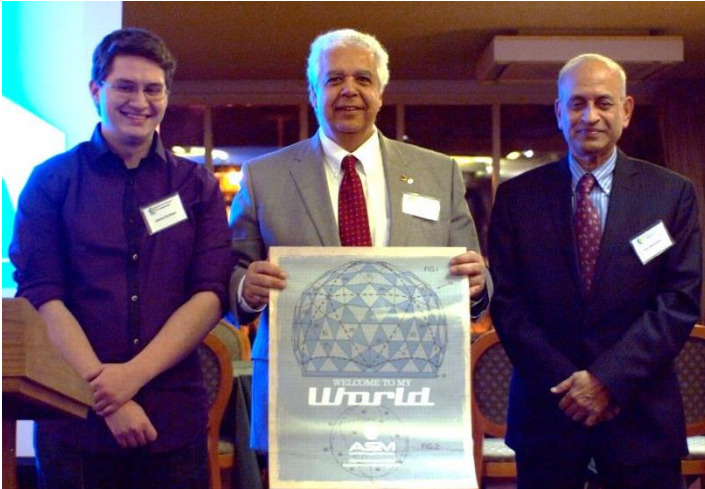


October Dinner Meeting Recap

Student Night Greg Nelson

ASM Edmonton welcomed the Immediate Past President of ASM International, Dr. Ravi Ravindran, and the Managing Director of ASM International, Thomas Passek, for the first Technical Dinner Meeting of the year. Mr. Passek discussed new ASM International initiatives and Dr. Ravindran presented on “*Light Alloy Processing Revolutionizing the Automotive Industry.*”



ASM Edmonton Co-Vice Chair James Derksen (left), TMS President Dr. Hani Henein (middle), and Dr. Ravi Ravindran (right)

The technical talk focused on the importance of cleanliness and the impact of alloying on the hot tearing of Aluminum and Magnesium alloy castings. This is an ongoing challenge in the automotive industries effort to reduce vehicle mass in order to reduce emissions. The talk was well attended by approximately 42 people including approximately 30 industry members and 12 students.

If you have any ideas for future technical speakers or topic please don't hesitate to contact us at ASM.Edmonton@gmail.com

November Event

ASM Technical Dinner Meeting

For the next technical dinner meeting of the season, ASM Edmonton will be welcoming Dr. Weixing Chen who will be speaking on the *An Overview of Near-Neutral pH SCC in Pipelines and Mitigation Strategies for its Initiation and Growth.*

Abstract

Stress cracking of pipeline steels in near-neutral pH has remained a significant integrity risk for oil and gas pipelines. Although it has traditionally been termed ‘stress corrosion cracking’, crack growth has never been observed under a static loading condition. It was determined later that the cracking is driven by corrosion-fatigue mechanisms with some uniqueness. First, the loading frequencies

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are typically well below 10×10^{-3} Hz, which is beyond the scope of most fatigue investigations. Second, the rate of corrosion is typically well below 0.1 mm/year at which a premature failure solely by corrosion would occur much longer than that actually found in the field. Third, hydrogen, a by-product of corrosion, can be generated to a level at which hydrogen embrittlement may occur only under special conditions.

This overview will discuss details on how the above factors are synergistically interacted to cause failures of pipeline steels in the field. Based on the understanding of the cracking mechanisms, strategies to mitigate field crack initiation and propagation will be introduced. In particular, a computer program has been built to incorporate the effects of variable loading conditions and loading interactions on crack growth. The operating life of a pipeline can be predicted using recorded SCADA data. The prediction reveals the highest susceptibility of crack growth at the discharge site that experiences severe underload cycles. This prediction is consistent with the field observations that more than 70% of all-service and hydrostatic-test failures were found within 30 km downstream of a compressor station.

About the Speaker

Dr. Weixing Chen is currently a professor in the Department of Chemical and Materials Engineering at the University of Alberta. He graduated from the University of Manitoba with a PhD degree in Physical Metallurgy in 1995, and received his M.Sc. and B.Eng. in Physical Metallurgy from Dalian University of Technology in China in 1987 and 1984, respectively. After being employed by Nova Chemicals for two years working on pipeline problems related to TransCanada's gas pipelines, he joined University of Alberta in 1999 as an assistant professor. He also worked as a NSERC visiting fellow in the Institute for Aerospace Research, at NRC in Ottawa, for about one year, and as a metallurgical engineer in SINOPEC for two years.

Dates and Times:

Date: Wednesday, November 26, 2014
 Registration: 6:00 PM
 Dinner: 6:30 PM
 Technical Program 7:30 PM
 Location: University of Alberta Faculty Club

RSVP by November 24, 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

Upcoming Events

2014 – 2015 Events:

Thursday, January 22, 2015 - Brian Ives
 Lectureship
 Speaker: Fredrico Rosei
 Topic: TBD
 Location: U of A Faculty Club

Thursday, February 26, 2015
 Speaker: Gary Fisher
 Topic: Upcoming Developments in Surface Coating Technologies for Wear
 Location: U of A Faculty Club

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Awards

Congratulations again, Katherine Jonsson (Past ASM Edmonton Chapter Chair), who received the **ASM International: Emerging Professional Achievement Award** during the September dinner meeting.



ASM Edmonton Co-Vice Chair James Derksen (left) and Ms. Katherine Jonsson (right).

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](#).

Dr. John Wolodko – Teacher’s Camp Outreach and Canada Council

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