



Edmonton Chapter News

Last Month

ASM Student Night Recap Katherine Jonsson

Greetings!

ASM Edmonton kick started the 2011-2012 Technical Program with the second annual Student Night held at the Faculty Club at the University of Alberta. This event was graciously financially sponsored by Acuren and Ludwig Associates Ltd. and door prizes were generously provided by CASTI Publishing Inc., which included the desirable CASTI Red and Black Books for non-ferrous and ferrous materials. Over 73 people attended this meeting, including over 50 students from NAIT and the UofA. We were pleased to invite 8 industry members from across Alberta who spoke about their personal experiences with the materials programs at NAIT and the UofA and gave important advice regarding career development, networking skills, and professionalism. Both students and industry members asked several questions and everyone seemed to enjoy the evening's discussions. The event was a huge success; special thanks go to Alyssa Shinbine, the Young Members Chair for ASM Edmonton, for organizing the event and arranging speakers. Again we would like to thank the evening's sponsors; Acuren, Ludwig Associates Ltd., and CASTI Publishing Inc., whose contributions made the entire event possible.

Metallurgy for the Non-metallurgist Reg Eadie

This is the third in a series of educational courses offered by ASM Edmonton. The first two were Elements of Metallurgy and Corrosion. These courses are given in the evening, once a week for three hours and run for 12 weeks. There are typically held at one of the branches of the Edmonton Public Library. Through ASM we are able to give a certificate of completion that would be recognized by most employers and by APEGGA. This Fall's course covers all aspects of metallurgy including extractive metallurgy, mineral processing, forming processes like casting and forming and joining processes. We have 16 students from a range of companies and backgrounds. Particularly notable are the six students from Master Flo and the two students for both Manluk Industries and Capital Power. The instructors are university instructors who have extensive teaching experience in the aspects of the course they are covering. This course continues until Dec. 19. In the New Year we will be offering a course in Failure Analysis taught mostly by industry experts. Stay tuned for more information

Sponsors Section

Please feel free to contact any of our sponsors directly

Sponsors of ASM Student Night

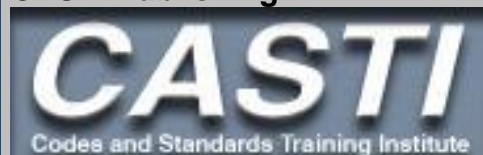
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Leadership Days

Chinnia Subramanian

Dr. Chinnia Subramanian, Edmonton Chapter Chair (2010-11) receives the **Chapter of Excellence Award** from Dr. Chris Berndt, the in-coming ASM President at the 2011 Leadership Days event at Materials Park, OH, USA



October Events

Technical Dinner Meeting

For our first technical dinner meeting of the season, we will be welcoming Dr. Weixing Chen, from the Department of Chemical and Materials Engineering at the University of Alberta. Dr. Chen will be discussing *Advanced Hydride Supercapacitors*.

Abstract:

This presentation will introduce advanced hydride supercapacitors developed at the University of Alberta and supported by AIEES (Alberta Innovates – Energy and Environment Solutions). This supercapacitor technology is built on several patent-pending discoveries in fabricating and processing carbon nanotube arrays and graphenes that were made in his research group by his research collaborators, particularly, Dr. Xinwei Cui.

Currently, the supercapacitor cell has been tested to over 8000 cycles and exhibits a surprisingly linear increase in its performance up to 230% higher than its initial value. The energy stored per unit weight significantly exceeds that of Li-ion batteries, in addition to its intrinsic fast charge/discharge nature which batteries do not possess. This gives the supercapacitors the potential to replace conventional Li-ion batteries and at the same time to fill technology gaps where the high charge/discharge rate is required. Such applications include wind/solar power generation and power plants for hybrid vehicles. It is estimated that the price of the supercapacitors will also be 30 to 50% lower than that of Li-ion batteries.

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. 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.

Upcoming Events

2011-2012 Events

November 17th - Joint Dinner Meeting with EATS
Speaker: Daryl Foley, Group Ten Engineering Ltd.
Location: 250 Karl Clark Rd

November 22nd - Dinner Meeting
Speaker: Dr. John Wolodko, AITF
Location: U of A Faculty Club

January 26th - Dinner Meeting
Speaker: J. J. Letcavtis, ASM International
Location: U of A Faculty Club

March 1st - Joint Dinner Meeting with AWS
Location: U of A Faculty Club

April 5th - Dinner Meeting
Speaker: TBA, Sintra Engineering
Location: U of A Faculty Club

May 6th - Industry Tour
Location: AlleyKat Brewery

June 7th - 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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Monthly Trivia

In the solidification of a binary alloy the phases and structures formed depend on cooling rate. For instance, take the solidification of an Al-3wt%Cu alloy. What are the phases present if: (i) cooled at an equilibrium rate, (ii) cooled at a non-equilibrium rate.

What is the term of the structure formed in case (ii)? What is the fundamental limiting process?

Courtesy of Greg Nelson

Dates and Times:

October 27, 2011
Registration: 6:00 PM
Dinner: 6:30 PM
Technical Program 7:30 PM
Location: University of Alberta Faculty Club

RSVP by October 25, 2011 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.

Awards and Recognition

ASM International: Silver Medal

This year the ASM International: Silver Medal was awarded to former ASM Canada Council Speaker **Dr. Priti Wanjara**, of Montreal.

The *Silver Medal* recognizes an emerging-leader mid-career professional who has made distinguished contributions to materials science and engineering and to ASM. The board cited Wanjara's "seminal scientific innovations in joining and forming research and technological development and outstanding service to the materials science and engineering profession." She is group leader, metallic products, joining and forming at the [National Research Council of Canada](#)'s Institute for Aerospace research.



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2011-2012 ASM Edmonton Executive

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Trivia Answers

- (i) Alloy will consist purely of α -Al at the equilibrium composition
- (ii) Mostly α -Al with some eutectic (α and θ). There will also be a composition gradient as the outer layers will be more solute rich.
- (iii) Cored structure
- (iv) Diffusion

Source: ASM Handbook Vol 3

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