
AIChE® The Pipeline

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A. Shaikh, M. Kettner, Co-Editors

October 2011

NEWSLETTER OF THE EAST TENNESSEE SECTION OF AIChE

Local section website

<http://www.tnengineering.net/AICHE/>

Local section mailing address

PO Box 7448 Kingsport, TN 37664-7448

****Reminder****

Strongwell Tour and Dinner

There are still spots available for the tour of Strongwell, a reinforced polymer composite structural products manufacturer in Bristol, on **Thursday October 27th at 5pm**. Immediately following the tour will be dinner at **Machiavelli's** (8 5th Street, Bristol, TN). Please contact Rebecca Glaspie at rglaspie@eastman.com to reserve your spot today!!!!

Upcoming November Program

“Industrial Nuclear Reactors”

Daniel T. Ingersoll
Senior Program Manager
Nuclear Technology Programs

Thursday November 17th, 2011 11:30AM to 1PM

B-150 Multimedia Room

(Pizza will be served at 11:30)

Abstract

Interest in smaller sized nuclear power plants is emerging rapidly in the United States, driven largely by economic considerations, carbon emission goals and energy supply concerns. A number of new small modular reactor (SMR) designs are being developed that offer the potential to be a more affordable and more flexible approach to increasing nuclear energy capacity for a broader range of energy customers. A historical perspective and current status of the national interest in smaller-sized reactors will be presented, along with a review of key promises and challenges. Also, the initial impact of the accident at Japan's Fukushima Dai-ichi nuclear plant on the potential for new SMR deployment will be discussed, as well as the prospects of a SMR being built in the Oak Ridge area.

About Our Speaker

Dr. Daniel Ingersoll is a Senior Program Manager in the Reactors and Nuclear Systems Division at Oak Ridge National Laboratory. In his 34 years at ORNL, he has led several groups conducting radiation transport and reactor physics research and managed several advanced reactor development programs supporting Department of Energy advanced liquid-metal-cooled and gas-cooled reactor concepts, Department of Defense radiation environment studies and neutron radiotherapy studies. Currently, he is supporting DOE's Office of Nuclear Energy to develop a new program of research and development for Small Modular Reactors.

Dr. Ingersoll received a BS degree in Physics from Miami University in 1973 and a PhD in Nuclear Engineering from the University of Illinois in 1977. He is a Fellow of the American Nuclear Society.

Letter from the Chair

Patrice Riesenberg

We will soon be having the East TN AIChE Officer elections! All National and/or Local AIChE members may vote. If you are in that group, look for an email that will soon be coming out. Thank you to all of the nominees. We are fortunate to have such great volunteers in our area.

Remember that joining our local section is only \$10. Contact any of the officers to join. Also, if you would like to join National AIChE, we may be able to assist you in paying your dues at the beginning of 2012. Look for more information from Rebecca Glaspie in this newsletter.

Not sure why you should join? See this link: www.tnengineering.net/AICHE/why-join-aiche.ppt. If it asks for a password, click cancel and it should open up the file.

Recap of October 2011 Program

John Franjione

Life Cycle Assessment: A Tool for Quantifying Environmental Aspects of Sustainability

Perry Murdaugh and Jason Pierce



Eastman Chemical Company

On October 11, Jason Pierce and Perry Murdaugh of Eastman Research Division presented an overview of life cycle assessment (LCA) at Eastman. LCA is a technique for quantifying the environmental impact associated with processes and products. The most well-known environmental impact indicator determined via an LCA is global warming potential, i.e. the mass of CO₂ (and equivalents) emitted in the course of making a product. LCA considers many other environmental indicators quantities as well: e.g. ozone depletion potential, eutrophication (water quality impact) potential, etc.

Eastman's focus has been on providing cradle-to-gate (i.e. from "mother earth" to product leaving Eastman) LCAs. To date, Eastman has completed LCAs on over 70 products.

Jason and Perry covered three broad areas:

- The context for LCA
 - Why does Eastman do them? How are they related to sustainability?
- Specific challenges involved with carrying out LCA
 - Where does the data come from? How do you allocate environmental impacts over multiple products? What are sources of uncertainty?
- How Eastman is applying LCA both inside and outside the company

The presentation slides can be found [here](#). Eastman's Sustainability website, which links to Eastman's 2011 Sustainability Report, can be found [here](#).

2011-2012 Program Series: Challenges and Future Trends in Chemical Engineering

Steve Miller

As highlighted in daily newspaper headlines, the world is grappling with significant social, political, and economic shifts and stresses. The U.S. chemical industry, competing in a global arena, is working through related challenges, necessitating those in the chemical engineering profession to identify and be prepared to participate in future trends in our industry.

With the current global challenges in mind, the East Tennessee Section Program Committee has put together a series of programs with the theme “*Challenges and Future Trends in Chemical Engineering.*” Over the next nine months, a number of topics will be explored by a collection of thoughtful and engaging speakers.

Date confirmation, location, and more information about each program will be communicated through subsequent emails and newsletters, but the plan for the fall is summarized below:

November 17th, Industrial Nuclear Reactors, Dan Ingersoll (Oak Ridge National Lab)

December 1st, Integrated Water Management (Challenges We Face in Coming Decades), John Barber (Eastman Chemical)

*Please note that these dates are tentative; subsequent newsletters and meeting notices will be used to confirm.

In the spring we will have presentations on the following topics:

- Chemical plant startup
- Scale-up/piloting visions for the future
- Future trends in process control
- Acquisitions: Looking forward, what will drive acquisition decisions?

Of course, no programming series would be complete without a focus on safety, and we have a very interesting safety presentation scheduled for the spring.

In addition, we have planned a plant tour with dinner to follow:

Thursday, Oct. 27th (5:00pm) – Strongwell Tour. We will be touring Strongwell, a reinforced polymer composite structural products manufacturer in Bristol. We will meet at a restaurant for dinner afterward.

We hope you will be able to participate throughout the year; it should be fun and informative.

-- Submitted by your 2011-2012 Program Committee:

John Aycock

John Franjione

Matthew Hedlund

Craig Hoyme

Laci Kemp

Noah McMillan

Steve Miller

Ashfaq Shaikh

Jaclyn Shuman

Nate Tilton

Project Benjamin

Rebecca Glaspie

Project Benjamin is back and better than ever! The East Tennessee Section wants to help you become a national AIChE member. As a board, we have decided to make membership one of our goals for 2012. To help you become a member, the board will assist you in paying your national dues in 2012. Project Benjamin was a program that targeted non-members that were new to the area – now it is being expanded to anyone who is not a member who would like to join the national organization. All you have to do is email Rebecca Glaspie at rglaspie@eastman.com and ask to be considered. Priority will be given to those who regularly attend program meetings.

Benefits of being a national member:

- You can vote for local section and national leadership (non members cannot vote)
- National AIChE provides PDH eligible webinars for members – Some free of charge (you also get a few credits to use toward webinars that cost)
- National membership greatly reduces your cost to attend AIChE conferences
- Chemical Engineering Progress magazine is included with your dues.

What's New at National AIChE

Steve Miller

Benefits of National AIChE Membership:

As an AIChE member, you have many advantages. AIChE offers its members identity protection, UPS and car rental discounts, insurances plans, and many other financial services. Learn more about these and your professional support tools by clicking on the link below.

<http://www.aiche.org/MemberCenter/FinancialBenefits.aspx>

Webinars:

AIChE offers a wide variety of live and on-line webinars. Check them out at:

<http://apps.aiche.org/chemeondemand/LiveWebinars.aspx>

Upcoming live webinars:

Molecular Gastronomy: The Science of Flavor

Presented by Professor Peter Barham, Wednesday, October 26, 2011, 2:00 p.m. - 3:00 p.m. ET

What gives food its flavor? What makes some foods taste really good while others can be mediocre or even disgusting? How far can science go in answering these and other questions that are so important for domestic cooks and chefs alike?

In this webinar, Professor Peter Barham addresses these and other questions. For example, he illustrates how we use all our senses to assess the food we eat: We use our eyes to see the color, shape and size; our ears to hear any sounds like sizzling or crackling; our hands to feel the texture; our tongues to sense the taste; our noses to sense the aroma; and all the nerves in our mouths to assess the “mouthfeel.” In practice, we integrate all these sensations

into what we call the “flavor” and then decide whether or not we like it.

People working in any area of chemistry will find something to interest them and pique their curiosity – people working in the food industry will find much to surprise and delight them.

Maintenance and Reliability for Chemical Engineers, Part Two–Asset Care Principles

Presented by David Rosenthal P.E., Wednesday, November 2, 2011, 4:00 p.m. - 5:00 p.m. ET (originally scheduled for 2:00 p.m. - 3:00 p.m. ET)

To compete in the marketplace, manufacturers require a greater return on their assets by having them produce the most, for the longest time, and for the lowest cost. Asset management methods, tools, and practices are applied throughout an asset’s life in order to achieve availability and operating cost goals. The strategies employed to achieve these goals are based on our understanding of machine failure mechanisms. With its origins in the airline industry, the understanding of machine failure made significant advances. Reliability-centered maintenance has allowed us to design and to apply the appropriate maintenance care. We have also come to understand the important role operations plays in this “battle” to prevent failure.

“Maintenance and Reliability for Chemical Engineers, Part Two–Asset Care Principles” initially covers our current understanding of how machines fail, focusing on the “bathtub” curves and the randomness of failure. Based on this understanding, the webinar goes on to cover what preventative and predictive methods are applied for maintenance care. Operator care and the important role they play in assuring equipment performance are also discussed.

Continuing Education – Professional Development Hours Available



Eastman Employees Only: Are you a professional engineer seeking to meet state continuing education requirements for professional development hours (PDH's)? If so, please visit this website for a list of potentially eligible courses and more information: [Continuing Education for Professionals](#)

Calendar of upcoming events



Several great programs are planned for the upcoming programming year. Topics include:

- Industrial Nuclear Reactors – November 17, 2011
- Integrated Water Management (Challenges We Face in Coming Decades) – December 1, 2011 (tentative)

Keep Up With the Local Section Online

Up-to-date information about the East Tennessee Section of the American Institute of Chemical Engineers can be found [on our website \(www.tnengineering.net/AICHE\)](http://www.tnengineering.net/AICHE). The website includes the Local Section Bylaws, List of Officers from 1945 to present, and an archive of Pipeline Newsletters - to mention only a few aspects of the information covered. Photos from past events can be found, along with contact information for the Local Board. Review the site occasionally and keep up with the local section!

2011 Local Section Officers, Directors, & Support Staff

Chair:	Patrice Riesenberg	229-8980
Chair-Elect and Program Committee Chair:	Stephen Miller	224-7350
Secretary:	Rebecca Glaspie	229-6144
Treasurer:	Braxton Sluder	578-6225
Directors:	Mark Harrison	229-6952
	Jennifer Mize	224-7018
	Lauren Moyer	229-2208
Local Section Webmaster:	Tim Nolen	229-8287
Short-Course Coordinator:	Mark Shelton	229-4753
Professional Development Coordinator:	Joe Parker	229-3850
AICHE Pipeline Newsletter Co-Editors:	Ashfaq Shaikh/Mark Kettner	229-8840
ETEAC Representative:	Joey Watson	229-6486

2011 Local Company Contacts

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