



American Institute of Chemical Engineers Knoxville-Oak Ridge Section

For additional information see our Web site at: <http://www.ornl.gov/sci/aiche/>
Or contact: Paula George, georgepm@ornl.gov, (865)576-0603 or
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October 2013 Meeting

Date: Thursday, October 10, 2013
Cost: \$20.00
Location: Rothchild Catering and Conference Center, 8807 Kingston Pike, Knoxville TN

5:30 pm AIChE Executive Committee Meeting (All members welcome)
6:00 pm Dinner – From menu
7:00 pm Program – Dr. Bill Partridge, Distinguished Research Staff, Oak Ridge National Laboratory – **Da Vinci Fuel-in-Oil**

Abstract – A major goal of the U.S. Department of Energy, DOE, is to promote the development of fuel-efficient and clean transportation technologies. As a DOE laboratory, ORNL performs broad-based research related to national energy security, and the ORNL Fuels, Engines & Emissions Research Center (FEERC) specifically focuses on efficient transportation technologies. Dr. Partridge's team within FEERC has developed a range of diagnostics for enabling practical advances in automotive efficiency across a wide range of technologies including combustion uniformity, exhaust gas recirculation (EGR) & intake system design, catalysis, fueling protocols and engine-system control and calibration. The presentation will highlight several of these R&D100-Award-winning diagnostics with focus on their practical applications.

Bio – Bill Partridge is Distinguished Research Staff at Oak Ridge National Laboratory in the Fuels Engines and Emissions Research Center. Over the past twenty five years he has developed numerous advanced analytical techniques for transient species and temperature distributions, and has applied these for broad research application including automotive catalysis and combustion, fuel reformers, Proton Exchange Membrane (PEM) fuel cells, non-thermal plasma reactors, convective cooling and biological photodynamic therapy. He has numerous publications and several patents related to these diagnostics, and led development of the SpaciMS and Fuel-in-Oil diagnostics, which have been commercialized and were recognized with 2008 and 2013 R&D100 Awards as being among the top 100 technology products of the year. Dr. Partridge was recognized as Oak Ridge National Laboratory's 2008 Distinguished Engineer for his sustained and innovative developments that have substantially improved the knowledge base of engine, aftertreatment, and fuel-cell systems. (see local section web site for additional information: <http://web.ornl.gov/sci/aiche/calendar.html#-1>).

Please make your reservations by noon, October 8, by contacting
Paula George, georgepm@ornl.gov, (865)576-0603 or
Rita Gray, rgray22@utk.edu, (865)974-5356

***The Section will subsidize up to 15 students,
including graduate students***

2013 AIChE Annual Meeting

November 3-8, 2013

Hilton San Francisco Union Square, San Francisco, CA

The AIChE Annual Meeting is the premier educational forum for chemical engineers interested in innovation and professional growth. This year's convention includes the following sessions:



2013 Annual Meeting: At-A-Glance

[Engineering Sciences and Fundamentals](#)

[Separations Division](#)

[Particle Technology Forum](#)

[Education Division](#)

[Management Division](#)

[North American Mixing Forum](#)

[Energy and Transport Processes](#)

[Materials Engineering and Sciences Division](#)

[Environmental Division](#)

[Computing and Systems Technology Division](#)

[Safety and Health Division](#)

[Process Development Division](#)

[Nuclear Engineering Division - See also ICE](#)

[Food, Pharmaceutical & Bioengineering Division](#)

[Fuels and Petrochemicals Division](#)

[Forest and Plant Bioproducts Division - See also ICE](#)

[Liaison Functions](#)

[Catalysis and Reaction Engineering Division](#)

[Computational Molecular Science and Engineering Forum](#)

[Nanoscale Science and Engineering Forum](#)

[Sustainable Engineering Forum](#)

[Chemical Engineering & the Law Forum](#)

[Upstream Engineering and Flow Assurance Forum](#)

[Pharmaceutical Discovery, Development and Manufacturing Forum](#)

[Career Workshop Proposals](#)

[Student Poster Sessions](#)

[Topical Conference: CO₂ Capture](#)

[2013 Annual Meeting of the American Electrophoresis Society \(AES\)](#)

[2013 International Congress on Energy \(ICE\)](#)

[Topical Conference: Nanomaterials for Energy Applications](#)

[Topical Conference: Sensors](#)

[Topical Conference: Systems Biology](#)

[3rd Annual World Congress on Sustainable Engineering](#)

[Topical Conference: Environmental Aspects, Applications, and Implications of Nanomaterials and Nanotechnology](#)

[Topical Conference: Advanced Membrane Separation for Sustainability](#)

[Topical Conference: Advanced Fossil Energy Utilization](#)

[Topical Conference: Innovations of Green Process Engineering for Sustainable Energy and Environment](#)

(Source: National AIChE Web-site: <http://www.aiche.org/conferences/aiche-annual-meeting/2013>)

Election of Local Section Officers

The following is an article by past Chair and current Director, Michael Aident.

In accordance with the Knoxville-Oak Ridge Section of the AIChE By-Laws (<http://web.ornl.gov/sci/aiche/bylaws.html>), officers and directors are to be elected every year. Officers serve a 1 year term whereas the directors serve for 2 years. Every year about this time the outgoing Chair is tasked with lining up a slate of candidates (recruiting volunteers) to run for office. This year is no exception. Jarrod Clark, after serving two years as Chair is again looking for volunteers to run for office. Last year the Chair Elect unfortunately had to relocate to another area of the country and could no longer be a member of our Section. We were very happy to have Jarrod continue on as Chair for a second term.

We are looking for members in good standing that may be interested in volunteering for any of the following officer/director positions.

- Chair Elect (the previous Chair Elect automatically slides into the Chair position).
- Secretary
- Treasurer
- Directors (2)

For the last several years we have been lucky in that David DePaoli and Paul Taylor have graciously volunteered to run for their officer positions of secretary and treasurer, respectively. We owe these two a world of gratitude for helping us keep the Section running as smoothly as it does. Although not an elected position, as long as I am recognizing hard

work, I think we need to take a moment and recognize the person that spends on average the most time each month on behalf of the Section - our Newsletter Editor, Ben Lewis. This Newsletter is Ben's baby and without him I don't know what we would do. Thanks Ben for producing such an award winning Newsletter. I am sure that Ben would welcome help from others to write or identify articles that could be published in our newsletter.

Now back to the elections. I believe that we have identified one volunteer to run for the Chair Elect position - Kyle Mack. Kyle is currently serving on the board as a Director. His 2 year term expires this year - Perfect timing to run for Chair Elect. I am sure that when elected, Kyle will serve the Section well as Chair Elect.

Although we have identified several volunteers to run for officers and Directors I want to encourage anyone who would like to become more active in the local Section to run for an office. If you have questions about the level of commitment, job duties, or would like to throw your name in the hat to run for an office, please contact Jarrod Clark at jarrod.clark@merrick.com. If you cannot reach Jarrod, feel free to contact me at Michael.Aident@CBIFederalServices.Com. If we don't have the answer, we know where to get it.

Once engaged in the Section meetings I am sure you will agree with me that we have an extremely great group of people who all work together to provide our Section with fantastic speakers and programs at each meeting. If you are unsure that you can make all the meetings and cannot commit to being on the Board, I encourage you to still come to the Board meetings (typically at 5:30, just before the scheduled Section meeting) and meet the people and

share your ideas. Board meetings are open to all members. Attending a board meeting is a good way to get a feel for the workings of the Section and to see firsthand the level of commitment and involvement required (actually very little) of the Section Officers. We routinely have several members participate in the board meetings although not elected to an officer or director position. If nothing else, it is a good way to network with other Chemical Engineers in the area.

Member Seeking New Position

Jeff Siler, EIT, PhD Chemical Engineer, spent 18 years as a research and process development engineer at Savannah River National Laboratory (SRNL) in Aiken, SC. He was laid off in a workforce restructuring in 2005. He spent another five years doing part-time contract work for SRNL. Jeff has extensive experience in laboratory and pilot-scale design and experimentation, particularly in reverse osmosis and filtration. He has also been involved in field testing and demonstration for environmental remediation projects. He is a versatile, out of the box thinker, who enjoys learning new things and solving problems to improve. He works well with all personnel from the mechanics and technicians, all the way to VPs.

Jeff is very interested in relocating to the Oak Ridge/Knoxville area. He grew up in southeastern KY about 60 miles north, and would like to be close to family and friends. His LinkedIn profile is available at:

<http://www.linkedin.com/pub/jeffery-siler/77/a86/989>.

Upcoming November Meeting Reminder

The November meeting of the Knoxville - Oak Ridge Section of AIChE will include a tour of the National Security Technology Center (NSTC) at the Y-12 New Hope Center at 602 Scarboro Road, Oak Ridge, Tennessee, 37831. To participate in this tour, the following restrictions must be met:

1. Must be a US Citizen.
2. No laptop computers.
3. Personal cell phones are OK, but no pictures, please.

Refer to the local section web site (<http://web.ornl.gov/sci/aiche/calendar.html#0>) for additional information on this unique opportunity to visit one of the nation's premier technology development and implementation facilities.

September Meeting Review

The September 19, 2013 meeting of the Knoxville - Oak Ridge Section of AIChE was held at the National Transportation Research Center (NRTC) at 2360 Cherahala Blvd, Knoxville, TN 37932. Dr Claus Daniel presented an overview on "ORNL's Energy Storage and Advanced manufacturing Initiatives," focusing on sustainable transportation technologies; including, advanced battery development and the application of additive manufacturing technology. Dr. Daniel's presentation is available on the local section's web-site via the Media link at: <http://web.ornl.gov/sci/aiche/mediagate.html>. Following the presentation, Dr. Daniel conducted a tour of the Manufacturing Demonstration Facility, where he highlighted battery technology development and the use of additive manufacturing for the production of complex components from various metals (i.e., titanium, stainless steel, and other alloys) and plastics. Various examples of advanced batteries and additive manufacturing products were examined.

Activities Calendar

Date	Time	Topic	Speaker	Location
Oct 10	6:00 PM	Da Vinci Fuel-in-Oil	Bill Partridge	Rothchild's, Knoxville TN
Nov 3-8		2013 AIChE Annual Meeting		Hilton San Francisco Union Square, San Francisco, CA
Nov 21	6:00 PM	National Security Technology Center Tour	Lee Bzorgi, Y-12 National Security Complex	El Cantarito Mexican Restaurant; Oak Ridge, TN
Dec 12	6:00 PM	Laser Scanning for 3-D Documentation	Michael Hollander – Innovative Design, Inc.	Rothchild's, Knoxville TN
Jan 16	6:00 PM	Impacts of Shale Gas Expansion – Joint with SWE	Sharon Robinson - ORNL	Rothchild's, Knoxville TN
Feb 21	6:00 PM	Joint Meeting with ANS	TBD	Calhouns on the River, Knoxville TN
Mar 13	6:00 PM	ClimateMaster Trilogy 40 Q-Mode Geothermal Heat Pump – Joint with ASM	Moonis Ally	Rothchild's, Knoxville TN
Apr 17	6:00 PM	Dandelion Roots to Rubber Pilot Plant for Ohio State University	David Pitts – Process Engineering Associates	Rothchild's, Knoxville TN
Apr XX		UT Department of Chemical & Biomolecular Engineering Awards Banquet		TBD
May 8	6:00 PM	Current Research Related To McClung Museum	TBD	McClung Museum

Sponsoring Opportunities

We continue to accept advertising in the newsletter in order to provide funds to support student participation in the meetings.

Rates per newsletter are:

\$80 full-page advertisement

\$45 half-page advertisement

\$25 quarter-page advertisement

The section will also continue to accept individual or corporate sponsors to provide student meals at section meetings. The sponsor

will be recognized at the meeting and in the Newsletter.

The cost to sponsor one meeting is **\$200**. It's a great way to encourage students to attend the local meetings and become future members in the Institute!



Cynobacteria study at SNL
(Image courtesy of DOE Digital Photo Archive, <http://www.doedigitalarchive.doe.gov/enter.cfm>)

"Do more than is required. What is the distance between someone who achieves their goals consistently and those who spend their lives and careers merely following? The extra mile."

Gary Ryan Blair
President of The GoalsGuy Learning Systems

Officers

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We're on the Web!

See us at:

<http://www.ornl.gov/sci/aiche/>

Editor: B. Lewis

About Our Organization... AIChE Salary Survey

Every other year in June, Chemical Engineering Progress (*CEP*) Magazine publishes the AIChE Salary Survey, which provides information on the salaries of chemical engineers cross-referenced with multiple factors and various demographics.

Chemical engineering salaries have increased over the past two years, reflecting an improved economy and job market for engineers. The median salary of survey respondents is \$120,000 — a 9% increase over the median reported in 2011.

As a member of AIChE, you can view the complete salary survey that appeared in print in the June 2013 issue of *CEP*, which includes tables, charts and more detail.

Not a member? Join today by visiting the national AIChE website at: <http://www.aiche.org/>.

(Source: <http://www.aiche.org/news/institute/06-06-2013/aiches-2013-salary-survey-published>)

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