



# 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](mailto:georgepm@ornl.gov), (865)576-0603 or  
Rita Gray, [rgray22@utk.edu](mailto:rgray22@utk.edu), (865)974-5356

### Inside this issue

- September 2013 Meeting
- Jubin wins Robert E. Wilson Award
- Daw to be Inducted as Fellow of AIChE
- September 2013 Meeting (continued)
- November Meeting – Pre-View
- July Meeting of TSPE Focuses on 3-D Laser Scanning – Local Section of AIChE to host Similar Topic during December Meeting
- Activities Calendar
- Sponsoring Opportunities
- Officers
- About Our Organization...Disc counts on Professional Development

## September 2013 Meeting

Date: Thursday, September 19, 2013  
Cost: Individual pay  
Location: National Transportation Research Center, 2360 Cherahala Blvd, Knoxville, TN 37932

5:00 pm AIChE Executive Committee Meeting – NTRC conference room CC01-C (All members welcome)  
5:30 pm Program – Dr. Claus Daniel, Deputy Director for the Sustainable Transportation Program at ORNL, *National Transportation Research Center, Manufacturing Demonstration Facility Tour – US Citizens ONLY*  
6:45 pm Dinner – Don Gallo – Hardin Valley – Order from menu

**Abstract** – The September 19, 2013 meeting will feature a tour of the US Department of Energy's Manufacturing Demonstration Facility (MDF) at Oak Ridge National Laboratory's National Transportation Research Center (NTRC). The MDF (<http://web.ornl.gov/sci/manufacturing/mdf.shtml>) provides a collaborative, shared infrastructure to help U.S. industry adopt energy efficient, flexible manufacturing technologies to lower production cost, increase manufacturing energy efficiency, and create new products and opportunities for high-paying jobs. The MDF is the first such capability established by the DOE Advanced Manufacturing Office to provide industry with affordable and convenient access to facilities, tools and expertise to facilitate rapid deployment of advanced manufacturing processes and materials. Access to ORNL's expertise and world-leading capabilities in material synthesis, characterization, and process technology is available through the MDF Technical Collaborations Program which is designed to assist manufacturing industries to implement new manufacturing concepts and methods. The scope of MDF Technical Collaborations is focused on additive manufacturing and carbon fiber and composites, but also includes other advanced manufacturing concepts consistent with ORNL strengths. (Continued on page 2)

**Bio** – Claus Daniel is the Deputy Director for the Sustainable Transportation Program at ORNL, Founding Director of ORNL's Battery Manufacturing R&D Facility, and Joint Faculty with the University of Tennessee's Bredesen Center for Interdisciplinary Research and Graduate Education. (Continued on page 2)

**Please make your reservations by noon September 12 by contacting**

Paula George, [georgepm@ornl.gov](mailto:georgepm@ornl.gov), (865)576-0603 or  
Rita Gray, [rgray22@utk.edu](mailto:rgray22@utk.edu), (865)974-5356

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

## Jubin wins Robert E. Wilson Award

Bob Jubin of the Nuclear Security & Isotope Technology Division at Oak Ridge National Laboratory has received the 2013 Robert E. Wilson Award from the American Institute of Chemical Engineers for his considerable contributions in the areas of nuclear fuel reprocessing and radioactive waste treatment.

This award recognizes outstanding chemical engineering achievements in the nuclear industry and promotes the objectives of AIChE's Nuclear Engineering Division and will be bestowed at the Annual meeting of AIChE in November.



Robert T. Jubin

## Daw to be Inducted as Fellow of AIChE

Stuart Daw of the Energy & Transportation Science Division at Oak Ridge National Laboratory and Director for the Knoxville-Oak Ridge Section of AIChE is to be inducted as a Fellow of the American Institute of Chemical Engineers at the Annual meeting of AIChE in November. AIChE recognized Stuart for "numerous technical contributions in the fields of coal conversion, fluidization, reaction engineering, combustion and engineering applications of nonlinear dynamics." Stuart, a UT-Battelle Corporate Fellow and an adjunct faculty member at the University of Tennessee, holds 15 patents and has more than 200 published papers.



C. Stuart Daw

Fellows are elite members of AIChE who have been practicing chemical engineering for normally 25 years or more, and have been a Member for at least ten years.

## September 2013 Meeting (continued)

Abstract (continued) - The meeting will also highlight ORNL activities to introduce the next generation of engineers to the next generation of manufacturing by working with student teams from regional high schools to create prototypes, components, and working systems to support entries in the FIRST Robotics Competition, a nationwide event that promotes science and engineering among high school students.

Bio (continued) – Dr. Daniel is a materials scientist, focusing on thin film structures, mechanical and functional properties, and laser treatment. He holds a PhD from the Saarland University and two M.S., one from the Saarland University and the other from the Lorraine Polytechnic Institute. Claus was identified as one of Knoxville's rising young leaders in the The Greater Knoxville Business Journal's 40 under 40 (<http://www.knoxnews.com/40-under-40/2012/>).

Attendees should show up at the front of NTRC at 5:30 pm and assemble in the lobby of the National Transportation Research Center, 2360 Cherahala Blvd, Knoxville, TN 37932. The NTRC is off Hardin Valley Road, just east of Pellissippi Parkway. Directions to NTRC may be found at <http://www.ntrc.gov/visiting.shtml>.

The NTRC tour is available to US Citizens only. If you plan to attend, you must be on the attendance list **by Friday, Sept. 13** to allow time to process badges. Note: DOE, ORNL, and Y12 visitors can use their badges; however, NTRC will still need each participant's name, title, citizenship, and company because of the requirement to register and track all visitors to the MDF.

## November Meeting – Pre-View

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.

The meeting agenda is as follows:

5:30 pm AIChE Executive Committee Meeting (All members welcome)

Location – El Cantarito Mexican Restaurant; 191 S Tulane Ave., Oak Ridge, TN 37830 (865) 482-0090

6:00 pm Dinner (Optional)

Location - El Cantarito Mexican Restaurant; 191 S Tulane Ave., Oak Ridge, TN 37830 (865) 482-0090

7:00 pm Program – Lee Bzorgi, Y-12 National Security Complex, Tour of the National Security Technology Center (NSTC) at the Y-12 New Hope Center; 602 Scarboro Road Oak Ridge Tennessee 37831.

**Abstract -** The National Security Technology Center was established in 2005 to support safeguards and security and the Department of Homeland Security. NSTC develops, demonstrates and deploys security technologies and products at the Y-12 National Security Complex for use at Y-12 and at other government agencies. NSTC also can tap into the expertise and technology at Y-12 to turn just

about any technology into reality—from concept to implementation. NSTC engages world-class equipment and expertise available at Y-12 to quickly move security technologies from vision to prototype to licensing. During the tour, Mr. Bzorgi will show and demonstrate current applications for:

- Access Rate Control System
- Chemical Agent Detector/Interrogator
- Omni Jaw-5™
- Improvised Explosive Device Route Planning Software
- Integrated Route, Risk, Resource, Analysis and Allocation Model
- SPECS—Stowable Portable Emergency Casualty Support

**Bio -** Mr. Bzorgi is the Director of the National Security Technology Center (NSTC) and a Senior Technical Advisor at the Y-12 National Security Complex (2001-present). He previously served as the Principal Discipline Engineer with Bechtel National Inc. (1985-2001). Mr. Bzorgi was responsible for the invention and design of various material handling systems, robotic systems, and unique facilities. He has designed products for all branches of the military. In 1997 Mr. Bzorgi designed one of the largest high-pressure compressor stations in the country for NASA at Huntsville, Alabama. This station replaced the original station designed by Wernher Von Braun. Fariborz “Lee” Bzorgi has a Master of Science, Engineering and a Bachelor of Science, Mechanical Engineering from Southern Illinois University—Carbondale.

**Relevant Experience & Awards:**

In 2010 Mr. Bzorgi received the Innovation Valley Technology Council's inaugural Pathfinder Research Entrepreneur of the Year award. He also was winner of the 2007 R&D 100 Award for the Rapid Deployment Shelter System an ISO based shelter, patented in 2006. In 2003 Popular Science Magazine published an article about Mr. Bzorgi titled “DOE's Gadget Guru”. He was also selected as winner of the 1998 and 1999 “Technological Achievement Award” for the American Museum of Science & Energy for “Solar Remediation System”, patented in 1999. Mr. Bzorgi was nominated as a member of Institute for Regulatory Science's review committee and is author of a book entitled “Summary of Remotely Operated Systems”. Among his many inventions and patents are: “Delayed Latching Mechanism”, Invented in 2012; “Access Rate Control System” (ARCS), patented in 2010; “SysChip™”, invented in 2006; “D-Clip”, invented in 2007; “Pipe Cutting System”, invented in 2000; “Voice Recognition Control Module”, invented in 1999; and “Self-Adjusting Extraction Nozzle”, Patented in 1998.

## July Meeting of TSPE Focuses on 3-D Laser Scanning – Local Section of AICHE to host Similar Topic during December Meeting

During the July 31 meeting of the Tennessee Society of Professional Engineers (TSPE), a presentation on 3-D laser scanning was given by David Headrick (Fig. 1) of 3-D Laser Scanning, a Division of LandAir Surveying Company at 118 N. Peters Rd Suite 202, Knoxville TN 37923 (Telephone: 865-599-0148). Mr. Headrick provided several examples of the type of 3-D images [for buildings and contents] obtained by integrating results from scanners. He also showed the types of digital results requested by customers [3-D, 2-D, color, black & white], some of which were similar to those seen on their website - <http://www.landairsurveying.com/>. Mr. Headrick also summarized several important points concerning the utility of 3-D laser scanning.

Consistent with the topic of the TSPE meeting, the Knoxville-Oak Ridge Section of AICHE has scheduled Michael Hollander of Innovative Design, Inc., to give a presentation on Laser Scanning for 3-D Documentation during our December 2013 meeting. Additional information on this topic will be posted in the December newsletter.

(Information on TSPE meeting courtesy of Harold Hartman)



Fig. 1. David Headrick during his July 31, 2013 presentation to TSPE-Knoxville members and guests on 3-D Laser Scanning.

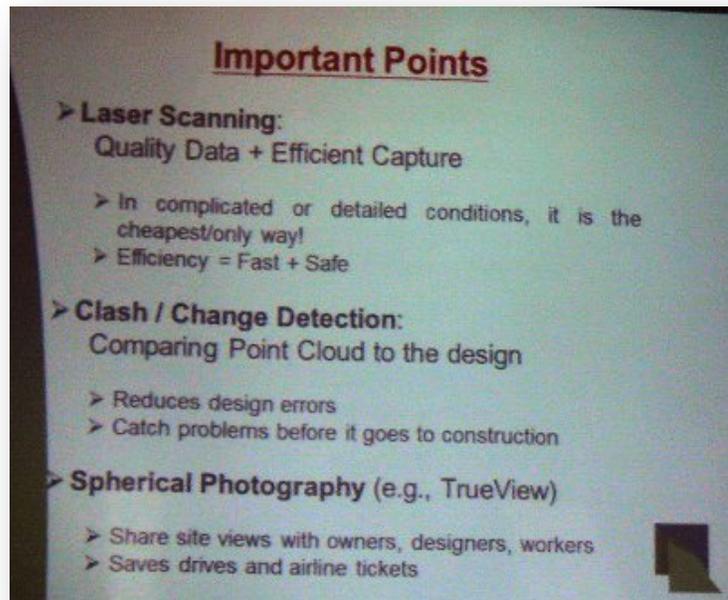


Fig. 2. Important Points from David Headrick's presentation on 3-D Laser Scanning.

## Activities Calendar

Date	Time	Topic	Speaker	Location
Sept 19	5:30 PM	Manufacturing Demonstration Facility Tour	Claus Daniel	NTRC
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 20	6:00 PM	Joint Meeting with ANS	TBD	Calhoun's on the River, Knoxville TN
Mar 13	6:00 PM	ClimateMaster Trilogy 40 Q-Mode Geothermal Heat Pump – Joint with SWE	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 15	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!



Cryomodule test facility at FERMI National Accelerator Laboratory  
(Photo courtesy of DOE Digital Photo Archive <http://www.doedigitalarchive.doe.gov/enter.cfm>)

## Officers

<b>Chair:</b>	Jarrold Clark	259-6552	<a href="mailto:jarrold.clark@merrick.com">jarrold.clark@merrick.com</a>
<b>Chair-Elect:</b>	Bonnie LaPierre	241-6521	<a href="mailto:lapierrebl@y12.doe.gov">lapierrebl@y12.doe.gov</a>
<b>Secretary:</b>	David DePaoli	574-6817	<a href="mailto:depaolidw@ornl.gov">depaolidw@ornl.gov</a>
<b>Treasurer:</b>	Paul Taylor	574-1965	<a href="mailto:taylorpa@ornl.gov">taylorpa@ornl.gov</a>
<b>Directors:</b>	Michael Aident	694-7333	<a href="mailto:Michael.Aident@shawgrp.com">Michael.Aident@shawgrp.com</a>
<b>Term ends 2014</b>	Stuart Daw	946-1341	<a href="mailto:dawcs@ornl.gov">dawcs@ornl.gov</a>
<b>Term ends 2014</b>	Chris McBride	692-8662	<a href="mailto:cemcbride@focusenv.com">cemcbride@focusenv.com</a>
<b>Term ends 2013</b>	Thomas Busmann	453-3538	<a href="mailto:tbusmann@focusenv.com">tbusmann@focusenv.com</a>
<b>Term ends 2013</b>	Kyle Mack	(423)747-7947	<a href="mailto:kylematthewmack@gmail.com">kylematthewmack@gmail.com</a>
<b>Membership:</b>	Paul Taylor	574-1965	<a href="mailto:taylorpa@ornl.gov">taylorpa@ornl.gov</a>
<b>Newsletter:</b>	Paula George	576-0603	<a href="mailto:georgepm@ornl.gov">georgepm@ornl.gov</a>
<b>Editor/Webmaster:</b>	Ben Lewis	574-4091	<a href="mailto:lewisbejr@ornl.gov">lewisbejr@ornl.gov</a>
<b>E-mail:</b>			<a href="mailto:aiche-chat@chem.engr.utk.edu">aiche-chat@chem.engr.utk.edu</a>
<b>Website</b>			<a href="http://www.ornl.gov/aiche">http://www.ornl.gov/aiche</a>

*"There are only two ways to live your life. One is as though nothing is a miracle. The other is as though everything is a miracle."*

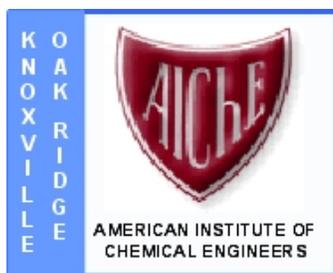
**Albert Einstein**  
Theoretical physicist  
1879-1955

## Knoxville - Oak Ridge Section

P.O. Box 2008  
Bldg. 4500N, Room B14  
Oak Ridge, TN 37830-6243

Phone: 574-6984  
Fax: 574-6986

E-Mail: [aiche-  
chat@chem.engr.utk.edu](mailto:aiche-chat@chem.engr.utk.edu)



We're on the Web!

See us at:

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

Editor: B. Lewis

### *About Our Organization...Discounts on Professional Development*

AIChE in partnership with MindEdge, Inc., offers a variety of online Professional Development courses. Logged in members can receive a 10% discount on these courses. The most recent additions include courses in project management.

#### **Online Project Management Courses Include:**

- PMP® Exam Prep
- Agile Certified Practitioner Exam Prep
- Project Risk Management: PMI-RMP® Exam Prep
- Emotional Intelligence for Project Managers
- Introduction to Agile
- Project Management for Information Technology
- Project Management

- Team Leadership
- Managing Real World Projects
- 4CShare Global Project Management Simulation
- Integrating Agile and Waterfall Practices
- Quality Management Basics

#### **Benefits of this Partnership Include:**

- Advance your career – Build your knowledge and skills and pass the PMP® certification exam.
- Maintain your skills – Earn PDUs and test your comprehension of PMBOK® Guide concepts with quizzes and practice exams.
- Get expert advice – Ask questions

- openly to ensure you get what you need from each lesson and PMBOK® Guide concept.
- Set your own pace – Take the time you need to process complex concepts, or power through more quickly—you set the pace.

Source: National AIChE website, <http://www.aiche.org/resources/member-services/pegasus-project-management-courses>

P.O. BOX 2008  
BLDG. 4500N, ROOM B12  
OAK RIDGE, TN 37831-6243

