



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
Rita Gray, rgray22@utk.edu, (865)974-5356

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December 2013 Meeting – Bring Your Spouse Night

Date: Thursday, December 12, 2013
Cost: \$20
Location: Rothchild Catering and Conference Center, 8807 Kingston Pike, Knoxville TN
5:30 pm Executive Committee Meeting (All members welcome)
6:00 pm Dinner – Menu
7:00 pm Program – Michael Hollander, Senior Vice President, Innovative Design, Inc., *High Speed Laser Scanning for 3-D Documentation*

Abstract – The Faro Focus3D scanner uses laser technology to produce incredibly detailed 3D images of complex environments and large scale geometries in only a few minutes. The resulting image is an assembly of millions of 3D measurement points that provide an exact digital reproduction of existing conditions.

The scan produces a “point cloud” image that enables precision modeling in 3D CAD software. From the 3D model, 2D drawings are then developed for fabrication and construction. During the process of gathering measurement data using older manual methods, the odds of missing a critical measurement were enormous. The need for intensive and costly time in the field is eliminated, plus the risk of human error is greatly reduced.

Additionally, the use of laser scanning technology and the resulting CAD drawings offers a cost effective method for producing “as-built” drawings and meeting the requirements for maintaining configuration management at regulated facilities. This is especially important since in recent years companies have reduced design support staff and not maintained current records of changes to the process.

Bio – Mr. Hollander, with over 45 years’ experience in engineering consulting and the chemical industry, is the Senior Vice President of Engineering for Innovative Design, Inc. His experience includes over 25 years of Process Engineering Management, Operations Management, and Environmental Management for companies such as Merck, Engelhard, Union Carbide and Carpenter Co. and over 20 years of consulting engineering for Environmental Management Solutions, IT Corp, Dames & Moore and Wiley & Wilson. Mr. Hollander’s background additionally includes project management, chemical process engineering, environmental, health & safety and quality management systems consulting in the chemical, pulp & paper, pharmaceutical, metals, aerospace, automotive and nuclear industries. He has provided these consulting services for a number of prestigious clients including: Nuclear Fuel Services, US ITER, Kimberly Clark Corporation, ALCOA, Brunswick Corp, BASF, Goodrich Aerospace, Mobil Oil, Olin, US Air Force, ALCAN and more. (See AIChE web-site (<http://web.ornl.gov/sci/aiche/calendar.html#1>) for additional information)

Bring Your Spouse / Significant Other

Please make your reservations by close of business, December 10, 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

CBE Department Student Poster Presentations at December Meeting

Students from the Chemical and Biomolecular Engineering Department at the University of Tennessee will be displaying posters of their research at the December 2013 meeting of the Knoxville-Oak Ridge Section of AIChE. You are invited to view the posters and interact with the students before and after the meeting. The posters were originally planned for presentation at the Symposium on Separation Science and Technology for Energy Applications in Gatlinburg this year, but unfortunately the symposium was cancelled due to the government shut down. The students research is under the general heading of Sustainable Engineering, but focuses on various energy related topics. The primary advisors for these students are Professors Pete Counce, Jack Watson, Paul Bienkowski, Niki Labbe, Gabriel Goenaga and Tom Zawodzinski. The posters are titled as follows:

"Freezing Point of High Concentrations of $AlCl_3$ in a Chloroaluminate Ionic Liquid"

"Use of Aspen-HYSYS in an Economic Model of a Solid Oxide Fuel Cell"

"Economics of Waste Heat Recovery of a Molten Carbonate Fuel Cell"

"Economics of a Hydrogen-Vanadium Regenerative Redox-Flow Battery (Fuel Cell)"

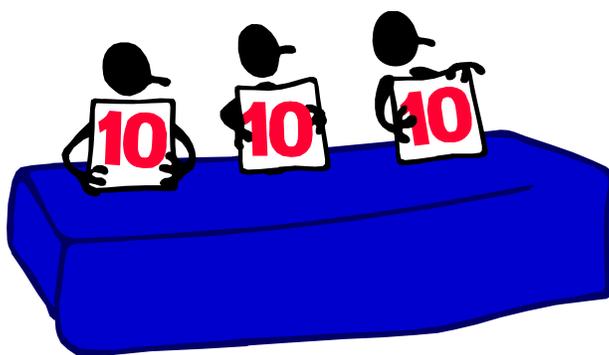
"Development of Processes to Add Value to use of Switchgrass for Biofuel Production"

"Design of a Geothermal Ground-Source Heat Pump System for the University of Tennessee Campus"

(Article courtesy of Paul Taylor)

Judges for Kingston Elementary Science Fair

Kingston Elementary School will hold its annual science fair for 3rd, 4th, and 5th grades on February 11, 12, and 13, 2014. The Kingston Rotary Club is recruiting judges for this event. Judges are involved for one-half day in the morning of each of these 3 days. Last year some of the better entries from the Kingston Fair subsequently won 27 awards in the Clinch Valley Science Fair in Oak Ridge. If you would like to volunteer to be a judge for the Kingston Elementary Fair, please contact David Reichle at drr4der@aol.com.



(Article courtesy of Tom Pickel)

Ballot — Knoxville-Oak Ridge AIChE Officers for 2014

Chair – Bonnie LaPierre
(Automatic succession)

Chair-Elect (Select one)

Kyle Mack

Write in _____

Secretary (Select one)

David DePaoli

Write in _____

Treasurer (Select one)

Paul Taylor

Write in _____

Director (Select two)

Michael Aident

Chris McBride

Write in _____



Please bring ballots to December meeting, or send by email to: Paula George at georgepm@ornl.gov or by postal mail to:

Knoxville-Oak Ridge Section, AIChE
C/o Paula George,
Oak Ridge National Laboratory,
P. O. Box 2008-6384,
Oak Ridge, TN 37831-6384

Michael Aident, PE received his BS Chemical Engineering degree from the University of Maryland in 1979. He is a registered professional engineer in Tennessee and a Certified Energy Manager (CEM). Mike has been with CB&I Federal Services (formerly Shaw Environmental / IT Environmental) since coming to Knoxville in 1984. As a Senior Process Engineer with CB&I Federal Services he has led teams of engineers and scientists in various projects including research and development, pilot testing, conceptual process design, detailed system design, equipment fabrication, operator training, system startup, and performance testing. Mike has specific expertise in the process design and evaluation in a number of industries including CO₂ capture and sequestration, energy management, as well as waste recycling and treatment. He has authored and published numerous technical papers on waste treatment systems that primarily focused on combustion and thermal treatment systems and their ancillary systems such as waste feed systems, burner systems, waste heat recovery systems, gas cleaning systems, and wastewater treatment systems.

David DePaoli is a senior researcher in the Nuclear Security and Isotope Technology Division at Oak Ridge National Laboratory. He has experience in fundamental and applied research aimed at applying chemical engineering principles to topics of national interest, including efficient chemical processing, advanced energy technologies, and nanotechnology. He is currently involved in projects related to critical materials and radiochemical processing. David received a BS in chemical engineering from the University of Michigan, and a PhD in chemical engineering from the University of Tennessee. He has previously held several officer positions in the Knoxville-Oak Ridge local section and was a director of the Separations Division of AIChE from 2003 through 2007.

Bonnie L LaPierre, EIT received her B.S. degree in Chemical Engineering from the University of Tennessee, Knoxville in 2008. She is currently an Instrumentation & Controls (I&C) Systems design engineer in support of the Design & Projects Engineering organization for the Uranium Processing Facility (UPF) project at Y-12. Bonnie has also worked at Y-12 as a Shift Technical Advisor for the Highly Enriched Uranium Materials Facility (HEUMF). Prior to working at Y-12, she worked as a Controls Systems Engineer doing Nuclear Safety Related Accuracy Calculations and Safety Related Nuclear Engineering Setpoint and Scaling Documents in support of I&C Design Engineering for Bechtel Power on the Watts Bar Unit 2 construction completion project. Bonnie is an engineer in training and is currently preparing to take the Tennessee registered professional engineer exam in 2013. She is a member of the American Chemical Society (ACS), American Institute of Chemical Engineers (AIChE) and an active member of the Tau Beta Pi Great Smokey Mountain Alumnus Chapter. In addition to her BS in Chemical Engineering, Bonnie also has a B.S. degree in Nutrition and Food Science with a minor in chemistry, which she received in 1989 from Northern Arizona University.

Kyle Mack is a professional engineer working in his fifth year with Merrick and Company as a Process Engineer contractor for the Department of Energy. He is currently pursuing a Master's in Business Administration through Tennessee Technological University and has his Bachelors of Science in Chemical Engineering from the University of Tennessee. Other work experience involves green engineering projects with the Oak Ridge National Laboratory and work rotations at Eastman Chemical Company.

Sharon Robinson has thirty one years' experience working at Oak Ridge National Laboratory (ORNL). She has held a number of positions at ORNL ranging from research to program planning to management in technical areas of nuclear and fossil energy, energy efficiency, and environmental management. At the present she is senior staff member supporting environmental management, nuclear materials management, and nuclear fuel cycle programs for the Department of Energy. She received her B.S. in Chemical Engineering from Tennessee Technological University in 1980. She obtained her M.S. and Ph.D. degrees in Chemical Engineering at the University of Tennessee in 1985 and 1992, respectively. She has been active within AIChE throughout her career: Fellow (2009), Robert E. Wilson Award (2009), Executive Board Programming Committee (2009), Chemical Engineering Technology Operating Council (2009 – Present), Research and New Technologies Committee (Chair 2007 – 2008, Vice-Chair 2005 - 2006), National Officers Nominating Committee (2012), Ambassador Program (2007-2008 & 2008 – 2009), Spring Task Force (2007 – Present), Education Division Formation Committee (2008), Alternative Energy Committee (2008 – 2009), Separations Division (Director 2000 – 2003), Nuclear Engineering Division, Center for Waste Reduction Technologies, and Knoxville – Oak Ridge Chapter (Director 1993 – 1994, 2004 – 2006, 2009, 2011 - 2012).

Paul Taylor, P.E. is a senior development engineer in the Nuclear Security and Isotope Technology Division at Oak Ridge National Laboratory. He has been the membership chairman of the local section for many years, and has previously served as Chair, Treasurer, and Director. Paul is a registered professional engineer, and is a member of the National Society of Professional Engineers and the Water Environment Federation in addition to AIChE.

Activities Calendar

Date	Time	Topic	Speaker	Location
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 10	6:30 PM	UT Department of Chemical & Biomolecular Engineering 2014 Awards Banquet	Welcome by Dr. Khomami Student Presentations	Calhouns on the River – upstairs banquet room, 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
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!



Loading uranium slugs in the ORNL graphite reactor
(Image courtesy of ORNL Photo Archive,
<http://www.flickr.com/photos/oakridgelab/3570368617/sizes/z/in/photostream/>)

Officers

Chair:	Jarrood Clark	259-6552	jarrod.clark@merrick.com
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"If you think you can do a thing or think you can't do a thing, you're right"

Henry Ford
American industrialist
(1863-1947)

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We're on the Web!

See us at:

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

Editor: B. Lewis

About Our Organization...Discounted Member Products and Services

As a member of AIChE, you are part of an elite worldwide community recognized as the global leader in the chemical engineering profession.

AIChE offers its members a wide array of services and resources—information, career, professional connections, education, recognition, savings, and personal benefits.

Careers

Whether you're a student looking for an internship, a young professional looking for your first job or a seasoned engineer looking to breathe new life into your career, AIChE offers a variety of options to help guide you. Learn about institute networking opportunities, attend a career fair, get profession advice, or simply check out the AIChE job board.

Insurance

AIChE offers members portable insurance plans you

can take with you when you change jobs or careers. See information on health plans, life insurance, disability insurance, auto, home, tenant insurance, and more.

Project Management

AIChE in partnership with MindEdge, Inc., offers engaging and effective online Professional Development courses. Logged in members can receive a 10% discount on these courses.

Financial Services

AIChE offers its members access to preferred rates for credit cards, CDs, money market accounts, estate planning services for both personal and business use.

Car Rentals

AIChE has made arrangements for members to save 5 to 15% off regular rates

every time they rent a car from Hertz or Avis.

UPS Discounts

AIChE members receive substantial discounts on overnight shipping with UPS, the world's largest package distribution company. Save up to 26% off shipping.

(Source: <http://www.aiche.org/resources/member-services>)

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