



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: Linda Puckett, puckettlf@ornl.gov, (865)574-6147 or
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February 2010 Meeting – Joint with ANS

- Date: Tuesday, February 9, 2010
Cost: \$20
Location: Calhoun's on the River, 400 Neyland Drive, Knoxville, TN 37902, Phone: (865) 673-3355
- 5:30 pm Executive Committee Meeting (All members welcome)
6:00 pm Social (cash bar provided)
6:30 pm Dinner – Buffet: Hickory Smoked Pulled Pork Served with Barbeque Sauce, Chicken Fingers with Honey Mustard Sauce, Baked Beans, Cole Slaw, White Creamed Corn, Baked Cinnamon Apples, Buttermilk Biscuits & Corn Muffins, Chocolate Chip Cookies
- 7:30 pm Program – Dr. Stanley L. Milora, Director of the Fusion Energy Division, Oak Ridge National Laboratory, ***Magnetic Fusion Research in the ITER Era: Status and Outlook***



Abstract – Dr. Milora will present the status of fusion energy technology development.

Bio – Dr. Milora is a pioneer in the technology and application of plasma fueling by hydrogenic pellet injection. During his career he has made original contributions to the theory of pellet ablation in magnetized plasmas and is the inventor and principal developer of the light-gas gun pellet injector concept that has been applied successfully on numerous plasma confinement experiments in the United States and abroad. During the course of these experiments, he demonstrated many of the effects of pellet injection on plasma performance including improvements in energy confinement time (e.g., the Pellet Enhanced Performance mode on JET) and Lawson parameter (a record value on the Tokamak Fusion Test Reactor). He has published more than 140 papers in related topics, including three review articles, and has given numerous invited talks at national and international conferences.

Additional biographical information for Dr. Milora is available at <http://www.ornl.gov/sci/aiche/calendar.html>.

**Please make your reservations no later than noon on
February 5, by contacting**

Linda Puckett, puckettlf@ornl.gov, (865)574-6147 or
Lori Daniels, lori.daniels@utk.edu, (865)974-2421

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

March Meeting Features NTRC Tour

Please mark your calendars for the upcoming March 18 meeting of the Knoxville-Oak Ridge Section of the AIChE, which will be held at the National Transportation Research Center (NTRC) located at 2360 Cherahala Boulevard, just north of Hardin Valley Road on the east side of Pellissippi Parkway (same exit as Pellissippi State). The facility can be seen from Pellissippi Parkway and is recognizable by the large 'NTRC' letters above the front entrance. The meeting will include the following:

- Dinner will be at 6:00 PM at Don Gallo's Mexican restaurant, 10681 Hardin Valley Road. After dinner we will go to the nearby NTRC building at 2360 Cherahala Boulevard (which is very close to Don Gallo's) for a presentation and tour of NTRC. Keith Kahl, Assistant Director of Transportation Programs, will give the presentation, which will be an overview of Oak Ridge National Laboratory's Transportation Program. The tour will include visits to several of the NTRC laboratories in the Fuels, Engines, and Emissions Research Center.
- All attendees must enter the NTRC building through the front entrance of the main lobby.
- The attendees will need to enter and leave the building lobby under escort, and will need to wear a pre-arranged badge at all times while in the building. In order to receive a badge and participate in the tour and meeting, we must have a list of names prior to 4 PM on the day of the meeting (March 18).
- Because of security considerations at NTRC, please note that **ONLY U.S. CITIZENS WILL BE PERMITTED TO ATTEND.**
- There are a limited number of parking spaces in front of the NTRC, but there is a large parking area in the back.

Hope to see you there on March 18!



(Source: DOE Digital photo archive at: <http://www.doedigitalarchive.doe.gov/>)

"Don't be too timid and squeamish about your actions. All life is an experiment. The more experiments you make the better."

Ralph Waldo Emerson
American essayist,
philosopher, and poet
1803-1882

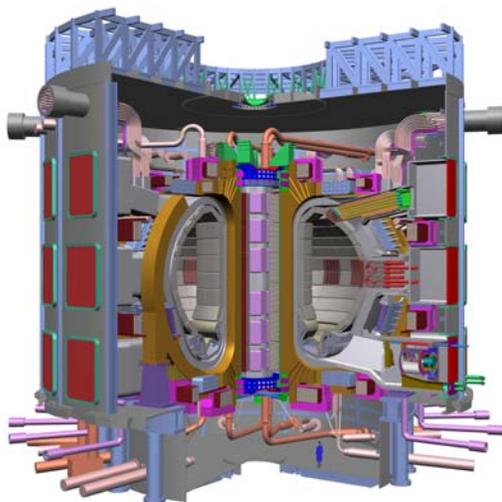
Southern Appalachian Science and Engineering Fair – Donate Today

The local Section has supported the Southern Appalachian Science and Engineering Fair (SASEF) for many years by supplying volunteer judges and by providing two special monetary awards for the best Chemical Engineering related posters in the Senior and Junior Divisions. Bechtel Jacobs Company, LLC recently donated \$500 to SASEF, at the request of one of our members.

Have you asked your employer to support SASEF?



SASEF Southern Appalachian
Science and Engineering Fair



(Source: https://www.usiter.org/international_project.shtml)

“Any sufficiently advanced technology is indistinguishable from magic.”

Arthur C. Clarke
English author
1917-2008

The ITER International Project

The long-term objective of fusion research is to harness the nuclear energy provided by the fusion of light atoms to help meet mankind’s future energy needs. This research, which is carried out by scientists from all over the world, has made tremendous progress over the last decades. The fusion community is now ready to take the next step, and have together designed the international ITER experiment (<http://www.iter.org/default.aspx>). The aim of ITER is to show that fusion could be used to generate electrical power and to gain the necessary data to design and operate the first electricity-producing plant.

In ITER, scientists will study plasmas in conditions similar to those expected in an electricity-generating fusion power plant. It will generate 500 MW of fusion power for extended periods of time, ten times more than the energy input needed to keep the plasma at the right temperature. It will therefore be the first fusion experiment to produce net power. It will also test a number of key technologies, including the heating, control, diagnostic, and remote maintenance that will be needed for a real fusion power station. Current participants are the European Union, Japan, the People’s Republic of China, India, the Republic of Korea, the Russian Federation, and the United States.

Refer to the U.S. ITER web site (<https://www.usiter.org/index.shtml>) for additional information on this project. There is also an excellent article on ITER, by Jan Berry, Juan Ferrada, Andrei Petrov, Kirby Wilcher, and T. Bond Calloway Jr. titled: *Bringing a Star to Earth*, published in the April 2009 edition of CEP, which can be accessed at <http://www.aiche.org/uploadedFiles/CEP/Issues/2009-04/040926.pdf>.

(Source: https://www.usiter.org/international_project.shtml)

Activities Calendar

Date	Time	Topic	Speaker	Location
Feb 9	6:00 PM	Magnetic Fusion Research in the ITER Era: Status and Outlook - Joint with ANS	Stan Milora, Fusion Energy Division Director, ORNL	Calhoun's on the River, 400 Neyland Drive, Knoxville, TN 37902
Mar 18	6:00 PM	Overview of ORNL's Transportation Program and tour of NTRC facilities – US CITIZENS ONLY	Keith Kahl, Assistant Director of Transportation Programs	Don Gallo's Mexican Restaurant, 10681 Hardin Valley Road followed by NTRC, 2360 Cherahala Boulevard, Knoxville
Mar 21-25		AICHe Spring Meeting		San Antonio, TX
Apr	6:00 PM	U.T. Student Awards Night	TBD	TBD
May	6:00 PM	TBD	TBD	Calhoun's, Turkey Creek

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!



(Source: DOE Digital photo archive at: <http://www.doedigitalarchive.doe.gov/>)

Officers

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"The most exciting phrase to hear in science, the one that heralds new discoveries, is not 'Eureka!' but 'That's funny...'"

Isaac Asimov
American Scientist,
1920-1992

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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/Wiley Press: Excellence in Chemical Engineering Publishing

The AIChE/Wiley Press was formed in 2005 in an effort to publish quality books that are useful to AIChE members, as well as other chemical engineers, and are distributed around the world. For books published by the AIChE/Wiley Press, AIChE generates the editorial material, while Wiley produces and sells them using its strong global sales and marketing capabilities.

AIChE's Books Subcommittee, charged with acquiring, reviewing, and publishing original

books on chemical engineering and related fields, is chaired by Dr. Joseph Alford, and its members consist of Drs. Thomas Edgar, Karl Schnelle, Patrick Mills, Jan Lerou, and Joel Fried, representing a broad spectrum of chemical engineering.

Members and colleagues that have written or are in the process of writing chemical engineering books, are encouraged to contact either Dr. Joe Alford at jmalford5@earthlink.net or Haeja Han at haejh@aiche.org.

For information on existing AIChE titles, please go to <http://www.aiche.org/apps/pubcat/index.asp>.

(Source: National AIChE web site: <http://www.aiche.org/Publications/wileypress/index.aspx>)

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