



## American Institute of Chemical Engineers Knoxville-Oak Ridge Section

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For additional information see our Web site at: <http://www.ornl.gov/sci/aiche/>  
Or contact: Linda Puckett, [puckettlf@ornl.gov](mailto:puckettlf@ornl.gov), (865)574-6984 or  
Betty Frazier, [bfrazier@utk.edu](mailto:bfrazier@utk.edu), (865)974-2421

### October 2006 Meeting – Joint with AWIS, SWE, and WIN

Date: Tuesday, October 17, 2006  
Cost: \$17  
Location: Buddy's Bar-B-Q Conference Center (588-0051) - 5806 Kingston Pike, Knoxville TN - Bearden Area (behind Buddy's original restaurant)

Menu: Pork BBQ, honey pecan chicken, salad, vegetables, and dessert

5:30 pm Executive Committee Meeting (All member welcome)  
6:00 pm Dinner  
7:00 pm Program - **Alan Wintenberg** of Atmospheric Glow Technologies, Inc. –  
**"Making Dreams Real"**

Abstract - Atmospheric Glow Technologies, Inc. (AGT) is a local company developing a number of products using atmospheric plasma technology licensed from The University of Tennessee. This talk will give an overview of the process AGT has gone through to get to where it is today. This involves examining many issues that most start-ups face – acquiring funding, hiring personnel, locating facilities, controlling Intellectual Property (IP), developing technology, and other considerations. The presentation will describe our use of the Small Business Innovation Research (SBIR) program and other government grants to conduct R&D and to initiate product development. It will also describe some of our R&D efforts and the two product areas we have selected for initial commercialization efforts.

Bio - Dr. Alan Wintenberg is AGT's Director of Engineering and is responsible for oversight of all engineering projects performed at AGT as well as direct project management of several product development projects. Prior to joining AGT in 2003, Alan was a Development Engineer in the Engineering Science and Technology Division of Oak Ridge National Laboratory. Alan received his B.S. in Engineering Physics and his Master's and PhD in Electrical Engineering from The University of Tennessee.

AGT is a growth-stage technology company dedicated to delivering products based upon its One Atmosphere Uniform Glow Discharge Plasma (OAUGDP®) technology. Potential applications include air purification, decontamination, sterilization, plasma aerodynamics, materials processing, and biotechnology. ATG was started five years ago by Dr. Kimberly Kelly-Wintenberg, who is the President, Chief Operations Officer, and Director of AGT, Inc.

Please make your reservations by noon, **October 16**, by contacting

Linda Puckett, [puckettlf@ornl.gov](mailto:puckettlf@ornl.gov), (865)574-6984 or  
Betty Frazier, [bfrazier@utk.edu](mailto:bfrazier@utk.edu), (865)974-2421.

***The Section will subsidize up to 15 students.***

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*"I don't know what your destiny will be, but one thing I do know: the only ones among you who will be really happy are those who have sought and found how to serve."*

*Albert Schweitzer*

## Science Club Service Opportunity

Julie Ezold will give a short presentation on this program at our October meeting.

In January 2006, the Oak Ridge/Knoxville section of the American Nuclear Society (ANS) began a primary school science club at Farragut Primary in Farragut, Tennessee. The club focuses on providing children with hands-on experiments to encourage interest in science and math. This effort has received very positive feedback from parents and students. The ANS has committed to continue the club this school year and is expanding to 3 new schools. The ANS has invited the local section of the AICHe to participate in this work and will be

discussing participation opportunities at our October meeting.

The ANS supports the science club financially while volunteers from the local chapter of Women in Nuclear (WIN) (and ANS) have been providing the human resources needed to make this program a success. The club consists of a series of take-home experiment kits. Volunteers put together units and a list of experiments, and then collect and assemble everything the child will need into a kit. The children take home a different unit each month. For the pilot project, the ANS handed out units on light and color, geology, biology, and magnetism.

The ANS is looking for more sponsors and volunteers to assist in the expansion of this project. If you are interested in participating in this work or know of a corporate sponsor that would like to participate, information packets are available.

Both the ANS and WIN have found this to be a good activity to bring members together and contribute to the community. In addition to the work done for the science clubs, the kits have also been successfully used at teacher workshops and local daycares.

Contact any Section officer if you are interested in participating.

## Dr. Collier Takes Position at Florida State

Dr. John R. Collier will be leaving The University of Tennessee (UT) on October 16<sup>th</sup> to begin a position as Professor of Chemical and Biomedical Engineering within the College of Engineering of Florida A&M University / Florida State University, Tallahassee, FL. John's wife, Dr. Billie J. Collier, who has served as Associate Vice Chancellor of Research at UT, will become the Dean of Human Sciences at Florida State.

Dr. Collier served as Department Head of Chemical Engineering at UT for 7 years. Prior to his arrival in Knoxville, Dr.

Collier served as Faculty Senate President, Chemical Engineering Department Chair and Associate Director of the Recyclable Materials Institute at Louisiana State University. Prior to that, he was an Associate Dean of the Graduate College and Research Institute at Ohio University. Dr. Collier, an AICHe Fellow, is an active researcher with over 100 citations appearing in a SciFinder literature search. His research interests involve polymer and textile processing and properties with particular emphasis on the influence of elongational and shear rheology on processing

and subsequent properties. He is also involved in research related to conversion of agricultural and industrial residues to value added products. Dr. Collier has taught courses in fluids, rheology, and polymer processing.

Dr. Collier was an active participant and supporter of the Knoxville-Oak Ridge Local Section. The Local Section thanks Dr. Collier for his outstanding performance as Department Head at UT and his involvement with the Local Section and wishes the Collier family a happy and successful tenure at Florida State.



Dr. John R. Collier  
(From <http://www.che.utk.edu/>)

## UT Announces New Chemical Engineering Department Head

After an extensive search, The University of Tennessee (UT) announced that Dr. Bamin Khomami has been appointed Head of the Department of Chemical Engineering and Armour T. Granger Professor of Chemical Engineering, effective August 1, 2006. Dr. Khomami joins UT from Washington University in St. Louis, MO where he was the Francis F. Ahmann Professor of Chemical Engineering.

Dr. Khomami received his B.S. degree in Chemical Engineering from Ohio

State University, Columbus, OH in 1983, an M.S. in Chemical Engineering from the University of Illinois, Urbana, IL in 1985, and a Ph.D. in Chemical Engineering from the University of Illinois, Urbana, IL in 1987. He is a member of The American Institute of Chemical Engineers, The Society of Theology, The American Institute of Physics, The American Chemical Society, The American Physical Society (Division of Fluid Dynamics and High Polymer Physics), and The International Polymer Processing Society.

Dr. Khomami has compiled a strong record of teaching and service and is widely recognized nationally and internationally for his research accomplishments. UT is fortunate to have attracted a scholar and researcher of his caliber to the Chemical Engineering Department Head position.

Please join us in congratulating Dr. Khomami on his new position and welcoming him to the College of Engineering at UT.



Dr. Bamin Khomami  
(From <http://eec.seas.wustl.edu/>)


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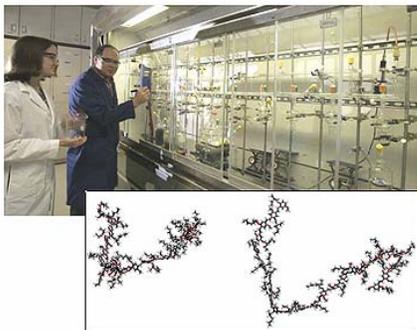
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*"Education is not the filling of a pail, but the lighting of a fire."*

*William Butler Yeats*



(Above) Polymer synthesis reaction underway at the Center for Nanophase Materials Sciences. (Below) One specialty of the CNMS is custom synthesis of tailored macromolecules, shown here, which enables detailed study and manipulation of polymer properties through control of the molecular configuration on a nanometer-length scale. (From <http://www.ornl.gov/>)

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*“Equipped with world-class instruments and staffed by researchers in a variety of scientific disciplines, the nanoscience center at ORNL allows researchers from universities, other national laboratories and industry to create, test and characterize a variety of new materials at a molecular level.”*

## ORNL Completes Nanoscience Center

Oak Ridge National Laboratory's new centerpiece for nanoscience research, the Center for Nanophase Materials Sciences (CNMS), is now complete — on scope, under budget and a month ahead of schedule.

"This is a demonstration of teamwork at its best," said Linda Horton, director of the CNMS. "The science staff has worked seamlessly with engineering staff, construction crews, federal regulators, and staff at our neighboring facility, the Spallation Neutron Source, to complete this nanoscience center ahead of time and under budget."

Nanoscience is the study of materials measured in billionths of meters. A nanometer is 1,000 times smaller than a germ or 100,000 times smaller than a human hair.

Equipped with world-class instruments and staffed by researchers in a variety of scientific disciplines, the nanoscience center at ORNL allows researchers from universities, other national laboratories and industry to create, test, and characterize a variety of new materials at a molecular level. This basic research could contribute to development of new catalysts to improve the environment, better sensors for industry, nanoscale computer processors, renewable energy

solutions, and lighter, more durable materials for cars and airplanes of the future.

With initial operations and the completion of the facility progressing simultaneously over the last year, the CNMS has already hosted nearly 100 users. While the center attracts researchers from around the world, it is also proving to be an important local research center, drawing many scientists from the southeastern United States.

Construction on the \$65 million nanoscience center began in August 2003. With completion of the building last year, the past 12 months have been spent installing world-class microscopes, lasers, scanning probes, and other instruments for materials synthesis and characterization. Those activities also included outfitting a 10,000 ft<sup>2</sup> clean room, a research-scale version of facilities used to make computer chips.

The nanoscience center is among the largest of several new construction projects at ORNL. Designated a user facility by DOE, the center integrates nanoscale science with neutron science, synthesis science, theory, modeling and simulation. With its proximity to SNS, a recently completed \$1.4 billion neutron science facility, materials from the nanoscience center will

have easy access to beams of neutrons. ORNL's Leadership Computing Facility is also a partner in the research, bringing the muscle of some of the world's most powerful supercomputers to bear on understanding the complex phenomena controlling nanoscale behavior.

Horton attributed the facility's early success to the teamwork of staff members from various divisions and scientific disciplines who put together a user facility still grounded in basic research. The center's development has stayed true to the vision outlining research directions for nanoscience authored by a team of scientists led by CNMS Scientific Director Doug Lowndes.

Successful construction was accomplished through a number of local partnerships with contractors, labor unions and ORNL staff.

The Local Section will be visiting CNMS on May 18, 2007.

(Excerpt from ORNL News Release at <http://www.ornl.gov/>)

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## Dr. David A. Tirrell to Visit UTK/ORNL

The East Tennessee Section of American Chemical Society (ACS) has announced that Dr. David A. Tirrell of Cal Tech has accepted an invitation to be the 2006 S.C. Lind Lecturer (<http://www.chem.utk.edu/acs>). He will be at The University of Tennessee Knoxville (UTK) on Thursday, November 16 and at the Oak Ridge National Laboratory (ORNL) on Friday, November 17. His research focus is on Biopolymers – combining organic, biological, and materials chemistry to make new polymeric systems of controlled molecular and

supramolecular architectures.

Dr. Tirrell is a Ross McCollum-William H. Corcoran Professor and Professor of Chemistry and Chemical Engineering Chair, Division of Chemistry and Chemical Engineering. For additional information on Dr. Tirrell, see his web site at <http://www.cce.caltech.edu/faculty/tirrell/index.html>.

(Excerpt from ACS Local Section Newsletter)

## Nominations for 2007 Local Section Officers and Directors

Tom Busmann is chairing the Knoxville-Oak Ridge Section Nomination Committee and is looking for individuals to run for office for the Section for 2007.

Per the By-Laws, the following offices are elected each year: Chair-Elect, Secretary, Treasurer, and two Directors. The Chair-Elect is a three-year commitment. Directors

serve for a two-year term. Secretary and Treasurer serve for one year.

If you are willing to serve your Section, please give your name to Tom soon ([tbusmann@charter.net](mailto:tbusmann@charter.net)).

Elections are in December and the terms begin in January 2007.

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*"A leader takes people where they want to go. A great leader takes people where they don't necessarily want to go but ought to be."*

Rosalynn Carter

## Activities Calendar

Date	Time	Topic	Speaker	Location
17 Oct	5:30 PM	Making Dreams Real	Alan Wintenberg – Atmospheric Glow Technologies	Buddies Bar-B-Q Conference Center, 5806 Kingston Pike, Knoxville
12-17 Nov		2006 Annual Meeting		San Francisco, CA
17 Nov	11:00 AM	The Watt Road Environmental Laboratory Initiative	John Storey - NTRC	Sagebrush Restaurant, Oak Ridge
5 Dec	5:30 PM	Forensic Science	William Bass – UT	Italian Market & Grill, 9648 Kingston Pike, Knoxville, TN
16 or 18 Jan	5:30 PM	Scintillation Materials	Chuck Melcher – Director of the Scintillation Materials Research Center	TBD
13 or 15 Feb	5:30 PM	Bio-based Products from Wood	Tim Rials – UT Forest Products Center	TBD
9 March	5:30 PM	Heterogeneous Catalysis	Larry Campbell – Advanced Catalysts	TBD
17 or 19 or 24 April	5:30 PM	UT Student Design/Awards	Student Teams	TBD
April 22-27		AICHE National Spring Meeting		Houston, TX
18 May	11:00 AM	Center for Nanomaterial Science	TBD	TBD

## 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!



## Officers

<b>Chair:</b>	Ben Lewis	574-4091	<a href="mailto:lewisbejr@ornl.gov">lewisbejr@ornl.gov</a>
<b>Chair-Elect:</b>	Mark Swientoniewski	574-1150	<a href="mailto:swientoniemd@bechteljacobs.org">swientoniemd@bechteljacobs.org</a>
<b>Secretary:</b>	Doug Hayes	974-7991	<a href="mailto:dhayes1@utk.edu">dhayes1@utk.edu</a>
<b>Treasurer:</b>	Steve McCoy	220-4730	<a href="mailto:mccoys@ttnus.com">mccoys@ttnus.com</a>
<b>Directors:</b>	Tom Busmann	694-7517	<a href="mailto:tbusmann@focusenv.com">tbusmann@focusenv.com</a>
Term ends 2006	Sharon Robinson	574-6779	<a href="mailto:robinsonsm@ornl.gov">robinsonsm@ornl.gov</a>
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Term ends 2007	Stuart Daw	946-1341	<a href="mailto:dawcs@ornl.gov">dawcs@ornl.gov</a>
Term ends 2007	Charles Forsberg	574-6783	<a href="mailto:forsbergcs@ornl.gov">forsbergcs@ornl.gov</a>
<b>Membership:</b>	Paul Taylor	574-1965	<a href="mailto:taylorpa@ornl.gov">taylorpa@ornl.gov</a>
<b>Newsletter:</b>	Linda Puckett	574-6984	<a href="mailto:puckettlf@ornl.gov">puckettlf@ornl.gov</a>
<b>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>
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*"Every man takes the limits of his own field of vision for the limits of the world."*

*Arthur Schopenhauer*

## Knoxville - Oak Ridge Section

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We're on the Web!

See us at:

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

### ***About Our Organization...***

Edwin Lightfoot, famous for the transport textbook by Bird, Stewart, and Lightfoot, *Transport Phenomena*, is an AIChE member. So is Al Sacco, NASA astronaut and professor. Bioengineer Kristi Anseth, designer of cell scaffolds, is a member too. By joining the American Institute for Chemical Engineers, you

will have access to people of this standing—and the technical information they offer.

AIChE membership is one of the best things you can do for your professional development, no matter what stage of your career you're in. There's no better way to meet as

many accomplished chemical engineers, or to tap into so deep a reserve of specialized information—[Join us.](#)

(Excerpt from the National AIChE web site at: <http://www.aiche.org/index.aspx>)

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