THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS®

Central Oklahoma Section Newsletter

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The Section is located at: Oklahoma Engineering Center, 201 Northeast 27th Street, Oklahoma City, OK 73105

The Central Oklahoma Section Newsletter is nominally published nine times per year to convey monthly meeting dates, meeting topics, section activities, and/or other ASME information to its membership.

Program: **Tour of the Southwest Nanotechnologies, LLC** **Date**: Thursday, Aug. 27, 2009

Host: **Mr. Larry Wallace**, Plant Engineer **Address:** 2501 Technology Place, Norman, OK

SouthWest NanoTechnologies, Inc. (SWeNT) was founded in April 2001 to commercialize nanotube technology developed by Professor Daniel Resasco at the University of Oklahoma. Their mission is to be the leading producer of high-quality single-wall carbon nanotubes and to be an innovative partner in the continued development and application of carbon nanotubes.

SWeNT carbon nanotubes are produced using the patented CoMoCAT® catalytic method in fluidized bed reactors. This results in selective synthesis of single-wall carbon nanotubes and remarkable control of diameter, chirality and purity (see page 2).

Single-wall carbon nanotubes exhibit unique properties due to their unusual structure. They consist of a hollow cylinder of carbon ~ 1nm in diameter, up to 1,000 times as long as it is wide. This structure has remarkable optical and electronic properties, tremendous strength and flexibility, and high thermal and chemical stability. As a result, carbon nanotubes are expected to have dramatic impact on several industries, including displays, electronics, health care and composites.

Be sure to join us on August 27 for this terrific tour to begin our 2009-2010 ASME-COS program year!

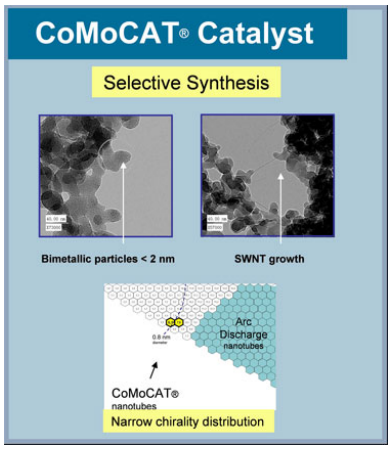
Time: 6:00 - 6:30 PM: Meet at SouthWest NanoTechnologies in Norman (see map page 2)
6:30 – 7:00PM: Pizza Meal & Short Presentation 7:00 – 8:30PM: Presentation and Tour

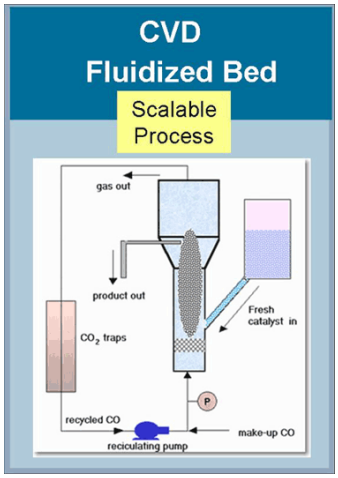
Cost: $5 for Sr. Members and ASME Student Members. Please place your reservation with Albert Janco (Ph: 405-848-1991 (leave message); e-mail: JANCOA@asme.org) by Tuesday, August 25 at NOON.

ADDITIONAL AUGUST MEETING INFORMATION

Pictured at right is SouthWest Nanotechnology's new $3.9 million, 18,000 square foot facility. Per SWeNT CEO David Arthur, "Until now, the barriers to commercialization have been quality, scalability and cost. SWeNT has addressed those obstacles. Since moving into the plant in June, we have increased production capacity for high-quality single-wall carbon nanotubes by 100-fold at one-tenth the cost."

Below are two images depicting SWeNT's carbon nanotube manufacturing process. Their CoMoCAT® catalyst yields better control of nanotube structure and their fluidized bed reactors allow nanotubes to be scaled large or small. Check http://www.swentnano.com for more information.





Below is a map providing directions to SweNT. From I-35, take the Highway 9 East exit. Travel east on Highway 9 to Technology Place (5 miles). Turn right (south) on Technology Place. SWeNT is on the left (east) side of the street.

It's Time to Renew Your ASME Membership!

ASME Membership is even more important to your career in today's marketplace by providing you with the tools to build your skills, expand your influence, and gain a competitive advantage. Taking advantage of the value that ASME brings you makes it a smart investment. Renew today!

BONUS: Renew online at **asme.org** and you will automatically receive up to 6 entries in a drawing for a 46-inch flat panel TV (a $1,500.00 value!).

***** Engineering Students and Recent Graduates Note: *****

Oklahoma Officials Stress Importance of Aeronautical Engineering to Economy

from NSPE's *PEI E-News* publication, July/August, 2009

Oklahoma Aeronautics Commission Director Victor Bird is stressing the importance of the aviation repair and maintenance industry and is pushing for increased incentives for aeronautical engineers. With so much of Oklahoma's economy dependent on aviation and aerospace, Bird believes that keeping local airports jet-capable and maintaining air traffic control systems will encourage a continued flow of business opportunities.

Important legislation was passed in 2008 that offers $5,000 in annual tax credits for five years to engineers who choose to work in the Oklahoma aviation industry. Similarly, employers can earn a tax credit for 50% of the tuition reimbursed to a new engineering graduate for the first four years of employment. Incentives like these are intended to attract and retain engineers and businesses so Oklahoma can avoid falling prey to the economic downturn that has affected so much of the aviation industry across the U.S.

More Colleges, Universities Incorporating Sustainability into Programs

from NSPE's *Daily Designs* publication, Aug. 3, 2009

USA Today (8/3, Berman) reports, "With an increased interest in the environment and growth in the 'green collar' job sector, colleges and universities are beginning to incorporate sustainability into their programs. From MBAs in sustainable-business practices to programs that give students the technical training necessary to operate wind turbines, students have an increasing array of options to choose from." Experts say that "student interest is driving colleges to create programs that offer training in sustainability," with a majority of students indicating that "a college's 'environmental commitment' would be a factor in where they applied." In addition, one expert said, "Students are really savvy shoppers...so they're realizing, with a changing economy and green jobs looking to take a leap within the next couple of years, that they want to be armed with those types of skills." *USA Today* notes that these programs take different forms, with many taking "an interdisciplinary approach."

EDITOR'S NOTE: Sustainability is a topic gaining considerable attention throughout our society. For example, sustainability conference was recently held in our area. Some leading areas of sustainability study include:

Urban Sustainability and the Built Environment

Water and Ecosystem Services

Energy, Biofuels, and Climate Change

Material Management and Human Health

Air Conditioning Systems Switching To New Refrigerant Come January 1

from NSPE's *Daily Designs* publication, Aug. 6, 2009

USA Today (8/6, Chaitin) reports that as of January 1, R-22, "a gas refrigerant and HCFC (hydrochlorofluorocarbon) [that] has been an air-conditioning standard" but "can contribute to ozone depletion...will no longer be on the market and will be replaced by a more environmentally friendly and energy-efficient alternative" known as R-410A, which lacks "chlorine, the chemical that contributes to ozone depletion." One problem is that "current air-conditioning systems cannot use R-410A without a serious overhaul, because it is compressed at a much higher pressure and requires different equipment," and "service for older models could disappear by 2020." Another problem is that the new air conditioners are expected to cost more, starting at "$5,000 to $8,000." Also, "Allan Thornton, president of the Environmental Investigation Agency...says certain HFCs will be a major global warming threat in the future."

DOT Flooded With High Speed Rail Requests

Engineering News-Record (07/20/09) Tom Ichniowski

via NSPE's *U.S. Engineering Press Review*, Aug. 3, 2009

Nationwide, demand for American Recovery and Reinvestment Act (ARRA) grants for high-speed rail far exceeds the $8 billion available, according to the U.S. Dept. of Transportation's (DOT's) Federal Railroad Administration, which has reported the receipt of 278 "pre-applications" for the rail grants, with applicants requesting a total of $102 billion. The department expects to award the first batch of economic-stimulus rail grants in the fall. The House Appropriations Committee meanwhile has included $4 billion for high-speed rail in its fiscal 2010 transportation spending bill, quadrupling the amount President Obama requested. The funding would supplement the ARRA's $8 billion. DOT Secretary Ray LaHood says that foreign companies are expressing interest in participating in the high-speed rail program.

EDITOR'S NOTE: It's my personal belief that establishment of high-speed rail lines in Oklahoma should be investigated to gauge cost, access, zoning/right-of-ways, potential usage, etc. Feedback from interested parties has ranged from cautiously for/against to at times stridently so. It's unknown if any Oklahoma interest has submitted such an ARRA grant proposal, but now would appear to be the time to do so.

ASME Announces Global Engineering Management Conference

Program to Provide Hands-on Experiential Learning Opportunities for Mid-career Engineers

ASME has announced the Global Engineering Management Conference, a new conference aimed at mid-career engineers that includes valuable hands-on learning opportunities. The conference is set for Sept. 13-16, 2009, at the Fairmont Dallas in Dallas, Texas.

The industry-focused Global Engineering Management Conference will explore the challenges that the global work environment is exerting upon the engineering profession. The conference includes four tracks on Managing New Technology, Managing and Developing Engineers, Supply Chain Management within the Global Market, and Managing Your Ecological Footprint in the Energy and Environmental Era.

The Global Engineering Management Conference will includes a host of hands-on learning programs and activities, including an exclusive tour of the new Texas Instruments LEED manufacturing facility, networking cocktail hour hosted by author Debra Fine, a behind-the-scenes tour of the new Dallas Cowboys Stadium and an exciting leadership seminar by author Bryan Dodge.

The conference also includes three keynote presentations by John Weber, president and chief executive officer of Remy International; Delores Etter, former assistant secretary of the Navy, and Bryan Dodge, president of Dodge Development, Inc.

ASME helps the global engineering community develop solutions to real world challenges. Founded in 1880 as the American Society of Mechanical Engineers, ASME is a not-for-profit professional organization that enables collaboration, knowledge sharing and skill development across all engineering disciplines, while promoting the vital role of the engineer in society. ASME codes and standards, publications, conferences, continuing education and professional development programs provide a foundation for advancing technical knowledge and a safer world.

ASME Contact: John Varrasi (varrasij@asme.org)

Benefits Spotlight on: *ME Magazine* and *ASMEnews*

Dear ASME Members,

I just put down the latest issue of ME Magazine – it's the one with all the ants on the cover (cool, right?). After reading the cover story about autonomous robots, what struck me (and is probably commonplace to you) is how mechanical engineers can use anything and everything to help solve the problems at hand. Modern day McGuyvers at work!

Mechanical Engineering is an amazing magazine! It's the award-winning flagship publication of ASME, and according to a recent member survey, it's one of the most recognized and appreciated member benefits. This is not a fluff publication, filled with self-serving pictures of Members at various meetings and conferences. *Mechanical Engineering* is an incredibly well written technical magazine, containing the latest industry news and valuable articles that will enrich your mind and provide the knowledge to help you get ahead in your career. As an ASME member, you receive the magazine each month, but I want to use this opportunity to encourage you to take some time to thoroughly read it.

Like me, I know you'll enjoy *Mechanical Engineering*! Speaking of enjoying things, *ASMEnews*, the popular online news resource, has been completely revamped (looks great and easier to navigate!) and is now emailed to you twice a month. Here's the link for the latest issue http://www.asmenews.org. If you want to learn more about ASME, it covers news of the Society, including appointments, events, ceremonies and special accomplishments by members. There is also a monthly column by the ASME President and another by the executive director, as well as a link to the breaking industry news of the day. I think *ASMEnews* is a terrific complement to ME Magazine.

As Mechanical Engineers, you always want the most up-to-date information on a variety of topics affecting your daily lives and jobs. As part of your membership dues, ASME gives you access to many sources of technical information, two of which I highlighted today. This is your Society and I urge you to take advantage of everything we have to offer.

As always, **thank you** for your continued loyalty to ASME and for your support of the engineering profession. Please feel free to drop me a line at membership@asme.org and let me know what you think. I hope you'll agree that ASME membership is more important to your career than ever!

Michael Kreisberg, Director, ASME Membership Development

Tulsa University Offering P.E. Mechanical Engineering Exam Review Sessions

Instructors: John Shadley & Siamack Shiraza

Sessions are designed to help you prepare for the P.E. Exam - Mechanical Section with greater confidence. You will receive demonstrations of solution methods and practices on typical problems from recent exams. Notes and textbook provided for the sessions will help you prepare for the exam. You may also discuss problems with other attending engineers and with your instructors (Tulsa University Faculty).

Course Outline: (1) Fluid Mechanics, (2) Gas Dynamics and Hydraulics, (3) Energy Conversion and Thermodynamics, (4) Heat Transfer and HVAC, (5) Statics, (6) Dynamics, (7) Mechanics of Materials, (8) Materials Science, and (9) Mechanical Design.

Course Duration & Cost: Seven (7) Saturday mornings from August 22 through October 10 (excepting September 5) at the University of Tulsa Keplinger Hall, Tulsa, OK.

Registration: Registration fee for all seven sessions is $745 per registrant. To register, you may contact the University of Tulsa CESE (Continuing Engineering & Science Education) office (phone (918) 631-3088) or go to http://www.cese.utulsa.edu/programdetail.php?ID=137. Select the course date, click on the registration fee, enter the number of people attending, then click the ***Register Online*** button. Online registration applies to credit card payments only

The fees for this course cover all lectures, handouts, and campus parking permit. You will need to purchase the following course textbooks (by Michael R. Lindeburg, PE):

- Mechanical Engineering Reference Manual for the PE Exam - 12th Edition
- Practice Problems for the Mechanical Engineering PE Exam - 12th Edition.

Both may be purchased through Professional Publications, Inc. (website http://ppi2pass.com/ppi/PPI).

P.E. Exam Dates

The ASME Central Oklahoma Section encourages its membership to seek professional registration. The first step is for Mechanical Engineering students to sign up for and take the F.E. (Fundamentals of Engineering) exam. Upcoming F.E. exams will be held the day (Saturday) after the P.E. exam dates below.

The Oklahoma P.E. Exams will be held on **Friday**, **October 23, 2009** (Fall Exam) and **April 16, 2010** (Spring Exam). Registration deadline for the Fall 2009 exam has passed but the registration deadline for the Spring 2010 exam is February 26, 2010. Contact the Oklahoma State Board directly to register for the exam or if you have questions about the application process:

State Board of Registration for Professional Engineers

Phone: (405) 521-2874 Email: okpels@pels.state.ok.us Web: www.pels.state.ok.us

Chair's Corner

Dear ASME-Central Oklahoma Section Members:

Hello everyone! Welcome to a new ASME-COS program year! Wow, summer goes by fast!

Over the summer our Executive Committee considered a number of endeavors including **fund raising** and presentation of **Professional Development short-courses**. Here is a summary of what we determined or found out:

Fundraisers: We've been fortunate that money used to fund recent scholarships has come largely from golf outings we organized a few years back. However, our scholarship fund needs to be replenished.

One fundraising idea was to hold a Schwan's (frozen food) fundraiser as described at http://www.schwansfundraising.com/publish/default.htm. We've all seen yellow Schwan trucks about our communities. Here we would take orders (from you all and others) and schedule the Schwan's truck for delivery (order pick-up). ASME-COS would receive a portion of the proceeds. Please let me know what you think of this idea (vickeryc1@asme.org).

Another source of funding we are investigating is engineering-related Oklahoma foundations. In the past we've successfully garnered grants for our programs and scholarships. The tough economy may hamper this effort but we'll give it our best shot.

Please let me know if you have other ideas on fundraising (vickeryc1@asme.org).

Professional Development: We found out that ASME does not offer the type of short-course like we'd want. ASME sanctioned courses are high-dollar and usually held in large metropolitan areas at expensive hotels. We seek short duration (6 hours optimal) courses on topics of interest to our membership that may be offered at minimal cost.

We are currently considering a short-course on SOLID MODELING, but need to gauge member interest. Please contact me or Mike Frey, Professional Development Vice-Chair (freym1@asme.org) if this interests you. Also contact us if you have good short-course materials already prepared.

Our August NANOTECHNOLOGY Program & Tour promises to be very good. Please plan to attend!

Thanks for your continued membership in and support of ASME. We look forward to seeing and corresponding with you all during the coming program year!

Curtis M. Vickery, Chair

Future ASME-Central Oklahoma Section Events

Date	Location	Program Topic and Speaker
Thursday April 27, 2009	SouthWest Nano-Technologies, LLC Norman, OK	**Tour:** Nanotechnology program and tour of Southwest Nanotechnologies Facility
Thursday Sept. 24, 2009	Oklahoma Christian University, Edmond, OK	**Rapid Prototyping Program and Demonstration** Dr. Bill Ryan, OC Mechanical Engineering Professor.
Thursday Oct. 22, 2009	Oklahoma Engineering Center, OKC	TBA

Please visit our Section website http://sections.asme.org/CentralOK/ for event updates and other useful information!