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Central Oklahoma Section Newsletter
Volume 19, Number 5, January 19th, 2018

Enhancement of Structural Safety using Nanocomposite Sensors and Advanced Non- Destructive Evaluation Technique

LOCATION: Oklahoma Engineering Center
220 NE 28 ST, OKLAHOMA CITY, OK ([map](#))

TECHNICAL PRESENTER: Dr. Yingtao Liu
Assistant Professor
School of Aerospace and Mechanical Engineering
University of Oklahoma

DATE: Thursday, January 25th, 2018

AGENDA:

5:30 PM Registration and Sign-in
6:00 PM Meal
6:30 PM Program & Presentation
7:45 PM Adjourn

PARKING: FREE self-parking available next to the building

MEAL: \$10 for ASME/AIAA members and professional guests, \$5 for students (Optional)



ASME, AIAA, SWE members, students, & guests welcome. Attendees will receive 1 PDH

Please RSVP by 5 PM on Tuesday January 23rd with Mr. Albert Janco at JANCOA@ASME.ORG or 405-848-1991 (leave message) and include the following information: Full Name, Company / School, Membership ASME, SWE, etc. Certificate of Attendance required for PDH? yes or no. Indicate if PE.

Abstract: Embedded and barely visible damage in engineering structures can significantly reduce structural reliability and safety, and can even cause catastrophic failure. Therefore, it is critical to provide real-time load monitoring capability using sensing system integrated within structures. In addition, novel non-destructive evaluation method can provide early damage diagnostics. In this presentation, the speaker will first discuss a carbon nanofiber reinforced nanocomposite pressure and strain sensors for real-time load monitoring. Piezoresistance based sensing signal is correlated to external pressure and strain as the key sensing feature. In the second part of the presentation, a novel photo-acoustic based non-destructive evaluation method is presented for damage detection. This method is truly non-contact and non-invasive with high resolution up to 1 micron.

SPEAKER BIOGRAPHY:

<http://www.ou.edu/coe/ame/people/Liu.html>

Dr. Yingtao Liu is an assistant professor in the School of Aerospace and Mechanical Engineering at the University of Oklahoma. He joined OU in Fall 2014. Before joining OU, he was an assistant research science in the AIMS center at Arizona State University. His research expertise include development and application of nanocomposites and smart structures, non-destructive evaluation, structural health monitoring and prognostics. He has published 60 technical papers and book chapters, served as a reviewer for more than 20 technical journals, and be an ASME member since 2010.

Future Section Events

Wednesday, February 21, 2018

Oklahoma Engineering Foundation Fair Rubberband Powered Vehicle Contest

VOLUNTEERS NEEDED

LOCATION: Science Museum Oklahoma. 2020 Remington Place, Oklahoma City, OK 73111

Please sign-up to volunteer at <http://oef.org/volunteers/engineering-fair-volunteers>

Thursday, February 22, 2018 5:30 PM

Joint Engineering Societies Banquet

Oklahoma Christian University 2501 E Memorial Rd, Edmond, OK 73136

March TBD

Annual Ethics Meeting

April TBD

38th Annual Oklahoma AIAA/ASME Symposium

University of Tulsa

ENGINEERING SCHOLARSHIP

We are now accepting applications for the ASME Central Oklahoma Section scholarships.

Deadline is March TBD

ASME society level scholarships are also available including a scholarship for high school seniors in a FIRST robotics competition team. See more scholarship details here:

https://community.asme.org/central_oklahoma_section/w/wiki/12430.engineering-scholarship-information.aspx

Chair's Corner

Happy New Year! We hope to see you at our meeting this month.

Thank you,

Doug Brown, Chairperson of ASME Central Oklahoma Section

Group Leadership Development Conference (GLDC) March 2 – 4, 2018

Invitations have been sent regarding the GLDC event, and the conference website is now available: <http://www.asme.org/events/gldc>

Note the deadline to register for the event and to make hotel reservations is January 31st. As a reminder, invitations were sent to all group leadership of the following groups:

Technical Divisions
Old Guard Committee
Research Committees
Sections & Sub-Sections
Technical Chapters

If you are a volunteer leader for one of the groups mentioned above, and did not receive an invitation, please contact gps@asme.org.

ASME Central Oklahoma Section Polo Shirt Order

Cost including taxes:

\$17.90 (S-XL) | \$18.06 (2XL) | \$21.14 (3XL) | \$22.69 (4XL) | \$25.75 (5XL) | \$27.29 (6XL)

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Partnering Organization Events

Society of Women Engineers (SWE) Oklahoma City Section (#i009)

Please see <http://okc.swe.org/calendar.html> for future SWE Oklahoma City section events



To join the SWE OKC mailing list, please join as a member of the i009 Oklahoma City Section at <http://societyofwomenengineers.swe.org/> or email swe.okc@gmail.com

More details and RSVP information to be posted at <http://okc.swe.org/calendar.html>

[ASME COS Website](#)[ASME COS LinkedIn](#)[ASME COS Facebook Group](#)

2017-2018 ASME Central Oklahoma Section Executive Committee

(Click on names for email address)

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