

2020 International Mechatronics Conference and Exhibition

Hosted virtually by Oklahoma State University

Workshops

A Comprehensive Workshop on

Energy Savings 101: Simple Steps to Improve Energy Efficiency

With special emphasis on saving energy and cost for small and medium-size manufacturers

Date: September 15, 2020, 9:00 a.m. – 12:00 p.m. CST

Registration: \$100

Abstract

Every year, much of the energy the U.S. consumes is wasted through transmission, heat loss and inefficient technology -- costing American families and businesses money and leading to increased carbon pollution. Energy efficiency is one of the easiest and most cost effective ways to combat climate change, clean the air we breathe, improve the competitiveness of our businesses and reduce energy costs for consumers. The Department of Energy is working with universities, businesses and the National Labs to develop new, energy-efficient technologies while boosting the efficiency of current technologies on the market.

The US Department of Energy (DOE)-funded Industrial Assessment Centers (IACs) help U.S. small-and-medium manufacturers to save energy, improve productivity, and reduce waste by providing no-cost energy audits conducted by university-based interdisciplinary teams of engineering students and faculty. The current IAC program at Oklahoma State University (OSU) is funded by DOE for the fiscal years of 2017 to 2021. Overall, there are 31 IACs in the United States, and the OSU IAC serves manufacturers in Oklahoma, Kansas, Arkansas, and North Texas. OSU IAC has been continuously operational since 1982. Particularly, the OSU IAC is first IAC to reach the 1000th assessment milestone among the 28 IACs nationwide. This is also one of the research projects that are consecutively funded every 5-years since 1982. Overall, the IAC program has achieved over \$4.5 billion of implemented energy cost savings since its inception. Particularly, the **OSU IAC program contributed \$317.5 million or 31.19 Tbtu of implemented energy cost savings since 1982.**

The OSU IAC program is fully supportive of the land-grant mission of OSU. This program integrates the three important objectives: (i) community service, (ii) teaching, and (iii) research of the land-grant mission. The IAC provides the public service of industrial energy audits at no cost to the client to help reduce energy and waste and to increase productivity, at the same time training students to make them capable of becoming the next generation of energy, sustainability, and productivity professionals. In addition, the IAC works with utilities, manufacturing extension programs, and manufacturing associations to educate them about plant energy conservation and energy management systems. Finally, the IAC team, in the course of its many contacts with manufacturers, learns what practices and products work and which ones don't. Team members share this "field research on the go" with other manufacturers as a form of consumer protection for industry.

This workshop specifically showcases the best practices for industrial energy efficiency improvement with special emphasis on saving energy and cost.

Structure

This comprehensive workshop host two 45 minutes sessions that includes 30 minutes of instructions and 15 minutes of Q&A to highlights the best practices through case studies to show how to improve the energy efficiency and save energy and cost. Participants will receive a Participation Certification and a Energy Counsellor Certification.

Intended audience

Anyone from professionals, plant administrative and staff, students, teachers or faculty members who are willing to learnt how to improve the energy efficiency and save energy and cost. Non-engineering students and faculties are most welcome.

Instructor



Dr. Hitesh D. Vora is an Assistant Professor in Mechanical Engineering Technology. He received his PhD and Masters' from University of North Texas in Materials Science & Engineering (in 2013) and Mechanical Engineering Technology (in 2008), respectively.

Dr. Vora is also a Director of the Industrial Assessment Center (IAC) at Oklahoma State University, which is funded by US Department of Energy (DOE) for the year 2016-2021 with total funding of \$1.8 million. He is actively teaching several courses and pursuing research in advanced (smart/cyber) manufacturing and energy management to improve energy efficiency (reduced energy, cost, and throughput) for small to medium-sized manufacturers.

The workshop will be provided by the OSU IAC team comprises of faculty and experienced staff members and graduate students.