Next generation NDE

Oct. 1, 2018

MSU hosts 23rd International Electromagnetic Nondestructive Evaluation Workshop


Yiming Deng, associate professor of electrical and computer engineering, and Mahmood Haq, assistant professor of civil and environmental engineering, served as general chair and co-chair for the event hosted at the Renaissance Center in downtown Detroit.

Other members of the organizing committee included MSU Executive Vice President for Administrative Services Satish Udpa and the following from the MSU Department of Electrical and Computer Engineering - Professor Lalita Udpa, Associate Professor Ming Han, Assistant Professor Sunil Chakrapani, and Professor Antonello Tamburrino of the Università degli studi di Cassino e del Lazio Meridionale, Italy, and MSU.

Engineering Dean Leo Kempel welcomed all the attendees to the conference and provided introductory remarks to open the workshop.

Deng said leading experts from universities, industry and government were able to interact on theoretical and applied research of electromagnetic NDE methods.

“There was a good exchange on the development of state-of-the-art technologies in NDE sensors, modeling, and signal processing,” he said. “We also advanced the international conversation on materials state awareness and characterization, damage diagnosis and prognosis, biomedical applications, and innovative industrial applications of eNDE.”

Haq called the workshop an excellent training and mentorship opportunity for future workforce and STEM leaders.

“The light-weighting of automotives using fiber reinforced composites creates new challenges,” Haq explained, “such as rapid NDE to meet assembly line requirements and associated modeling for accurate prediction of ‘residual life’ in...
case of defects or flaws. These new challenges create excellent opportunities for collaboration between academia and industry.”

Deng and his team are currently working on developing next generation NDE techniques and standards under grants from NSF, DOE, DOT, DOD, and industries.

“The value of next generation NDE is to ensure the safety and reduce the manufacturing and maintenance costs for complex engineered systems and critical infrastructures, such as nuclear reactors, bridges, aircraft, pipelines, and ships, and to ensure our society's industrial and economic prosperity,” Deng said. “In the long term, there will be no limit to what automated and AI-enabled NDE can accomplish in science and engineering. The horizon is bright.”

Added Haq, “MSU scholars and graduate students presented their work and many more volunteered to make this workshop a success.”

Related Website: 23rd International Electromagnetic Nondestructive Evaluation Workshop
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