



The Institute of Electrical and Electronics Engineers (IEEE)



Galveston Bay Section Meeting

Organized by Communication Society and Joint Societies Chapters

July 19th, 2018 (Thursday) Luncheon Meeting

TOPIC: “Future of Nanotechnology and Nanomaterials ”

SPEAKER: Dr. Sivaram Arepalli,

Department of Materials Science and NanoEngineering Rice University

PRESENTATION: Nanotechnology is based on the premise of controlling the properties of matter by manipulating at the nanoscale level. It is therefore fundamentally dependent on how to synthesize and modify nanoscale structures to get the desired macroscale properties. Controlled synthesis and processing of nanomaterials has been the subject of intense research during the last couple of decades. This talk will focus on some interesting nanomaterials such as carbon nanotubes, graphene, Zinc Oxide and silicon nanowires. Applications of nanocomposites and nanosensors for aerospace, electronics, energy and healthcare will be highlighted. The future of nanomaterial development in manufacturing and 3D printing will be discussed. Possible limitations of these nanomaterials because of environmental and health safety issues will be pointed out.

SPEAKER: Dr. Sivaram Arepalli is an Adjunct Professor in the Department of Materials Science and Nano Engineering at Rice University. His current interests include synthesis and processing of Nanomaterials (including CNT, BNNT and graphene) for energy applications such as fuel cells, solar cells, batteries and supercapacitors. He also focuses on experimental and computational research for material development for subsonic to hypersonic aerothermodynamic flows in addition to aerospace structures, environmental sensors and bioimplants. He enjoys teaching and conducts workshops on Nanomaterials and their applications for Energy, Medicine and Aerospace.

Dr. Arepalli was the Vice President of Graduate Education at the National Institute of Aerospace (NIA), Hampton, VA and coordinated a multi University consortium for NASA Langley. From 2009 to 2013, he was a Professor under the World Class University program in the Department of Energy Science at Sungkyunkwan University (SKKU) in Suwon, South Korea. He was the Chief Scientist of the Applied Nanotechnology Program and Reentry Plasma Diagnostics Program at NASA-Johnson Space Center and worked for 22 years before moving to Korea in 2009.

Dr. Arepalli received his Ph.D. in Physics from the Indian Institute of Technology (IIT) Kanpur in 1979. He finished postdoctoral work at the University of Pennsylvania, Cornell University and the University of Illinois at Chicago prior to joining Lockheed Martin at Houston in 1987. His activities were focused on laser based flow diagnostics, aerothermodynamics, and nanomaterials. He was responsible for the NASA-Rice workshops on carbon nanotube growth and NASA-NIST workshops on nanotube measurements. He was part of the ISO team in establishing standards for carbon nanotubes.

Dr. Arepalli is an Associate Fellow of AIAA and is nominated as a Fellow of APS. He is a member of AIAA National Technical Committee on Terrestrial Energy. He was on the AIAA National Technical Committee on Aerodynamic Measurement Technology from 1994-2001. He was the recipient of the “Chairman’s Award for 1998” from G. B. Tech., Inc. and “President’s Award for 2005”, from Jacobs Technology for his support of NASA-JSC. In 2007, he received “Rotary National Space Achievement Award” for the accomplishments of the Carbon Nanotube Team. He received the “Nanocarbon 2008 Award” from the Carbon Society of Japan in 2008. He conducted several Nanotechnology based workshops and conferences. Dr. Arepalli is a founding Board Member of Science National Honor Society. He volunteered as science fair judge since 1988 and was the science fair coordinator for American Physical Society, Jacobs Technology and Lockheed Martin at the Science and Engineering Fair of Houston during 1994 to 2009. He enjoys interacting with students and giving Nanotechnology focused talks.

Gilruth Recreation Center NASA-JSC, Discovery Room (downstairs)

Free parking. No security processing required. Easy drive in off Space Center Blvd. See website below for map.

Interested non-IEEE engineers, technicians, scientists, IEEE Members and guests alike are welcome!

12:00 PM – 1:00 PM - Program and Q&A

11:30 AM - Light Lunch with reservation (\$10.00 donation). Complimentary for IEEE student members with reservation. INDICATE IF YOU TAKE VEGGIE ONLY.

Please RSVP Before Noon Tuesday July 17th, 2018

Number of lunches is limited. Please reserve early

Reservations for lunch or to attend this meeting should be made by email to:

d.k.rutishauser@ieee.org

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