



UCF

UNIVERSITY OF CENTRAL FLORIDA | ORLANDO

College of Engineering and Computer Science
FACULTY RESEARCH TALKS

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Zoom talk | Friday, Sept. 11, 2020 | Noon to 1 p.m.



Industry Partner Spotlight: Lockheed Martin

Tom Mirek, vice president of Engineering Operations for Engineering & Technology (E&T) at Lockheed Martin Missiles and Fire Control (MFC) will provide a high-level overview of Lockheed Martin and MFC. Mr. Mirek will share information on MFC's product lines and where the company focuses its research and development resources. He will highlight the Lockheed Martin-UCF partnership and how we can continue to grow this partnership moving forward.

PRESENTER 1:

TOM MIREK

Vice President of
Engineering
Operations,
Lockheed Martin
Missiles and Fire Control

Tom is responsible for helping lead and manage the MFC E&T organization, serving as the point of contact for Orlando operations and working in conjunction with the Line of Business (LOB) Chief Engineers and E&T functional staff to ensure successful execution of MFC's Orlando engineering efforts. He has lead responsibility for attracting, developing and retaining technical talent in accordance with the current and future business needs of MFC.

Previously, Mr. Mirek was director of Engineering Excellence at Lockheed Martin Missiles and Fire Control. In that role, he was responsible for the streamlining and integration of engineering activities to ensure that excellence in design and devotion to mission success was a primary focus. Mr. Mirek also was responsible for supporting the Lockheed Martin UK activities, including leading the Scout and Warrior program critical design reviews. He also led the MFC Fellows program. He held this position from October 2012 to December 2015.

He previously served as LOB Chief Engineer for Fire Control Systems at Lockheed Martin Missiles and Fire Control. In that role, he was responsible for all aspects of engineering performance including technical, cost, schedule, and talent aspects, including the Santa Barbara Focalplane site, from April 2006 to October 2012.

Throughout his career, Mr. Mirek has led several critical initiatives for Lockheed Martin Corporation, including several diversity initiatives including being an ambassador of the Effective Leadership of Inclusive Teams initiative. He has also been a driver in the development of MFC Knowledge Continuity and Talent Development efforts within E&T.

Mr. Mirek is a member of the UCF College of Engineering and Computer Science Dean's Advisory Board and has served on the board of trustees for the National Multiple Sclerosis Society and the Orlando Science Center. He graduated from the University of California, Berkeley with a B.S. in mechanical engineering.

ZOOM LINK: <https://bit.ly/35unuVe> | **QUESTIONS?** Email Jennifer.Sutton@ucf.edu

For more information, and to see previous talks, visit www.cecs.ucf.edu/faculty-research-talks



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PRESENTER 2:

KRISTOPHER O. DAVIS

Assistant Professor,
Materials Science and
Engineering, RISES
Cluster, Florida Solar
Energy Center and
CREOL

Maximizing the Efficiency, Reliability, and Affordability of Solar Energy Technologies

Dr. Davis will discuss research aimed at improving the performance, reliability and affordability of photovoltaics (PV). This includes the development of innovative materials with unique functionalities that reduce energy conversion losses (e.g., conductive interface passivation and charge carrier selectivity), the development of powerful measurement techniques for detecting and classifying defects rapidly, and fundamental insights gained from the characterization of devices across different length scales, from meters to nanometers.

Dr. Davis has served as principal investigator (PI) and co-PI on projects funded by industry, the State of Florida, and the Department of Energy. These projects focus on the development of new manufacturing processes and characterization techniques to improve the performance and reliability of PV technologies, reduce cost and gain fundamental insight into the structure-property relationships of PV materials. Dr. Davis earned his B.S. in electrical engineering from UCF in 2007, and his M.S. and Ph.D. in optics and photonics from UCF in 2011 and 2015 respectively.



PRESENTER 3:

SUBITH VASU

Associate Professor,
Mechanical and
Aerospace Engineering,
Center for Advanced
Turbomachinery and
Energy Research

Non-intrusive Laser/Optical Diagnostics & Sensors for Problems in Hypersonics, Energy, Propulsion, Fire, Detonations, Rockets, Space Exploration, Opioids and COVID-19

Dr. Vasu uses optical and novel laser diagnostic techniques to investigate various problems in fundamental and applied issues spanning mechanical, aerospace, chemical, and relevant to practical conditions. This strategy provides non-intrusive, time-resolved and remote detection of thermodynamic and flow properties such as species, gases, temperature, pressure, etc. Applications of these techniques and available facilities span low-temperature and low-pressure vacuums, similar to atmospheric and space conditions, to high-temperature harsh environments in rockets, fires and hypersonics.

Dr. Vasu's training and work lie at the intersection of engineering, chemistry, physics and optics. He is an expert in laser/optical sensors, shock waves, spectroscopy, reacting flows and chemical kinetics, bringing in projects worth more than \$8.4 million. Dr. Vasu received his Ph.D. from Stanford University (2010) and his B.Tech from the Indian Institute of Technology Madras (2004), India. He has received many prestigious early-career awards, including the DARPA Director's Fellowship, DARPA Young Faculty, DTRA YIP, Microsoft Investigator Fellowship and the SAE International Ralph R. Teetor Educational Award. He has also received much recognition from UCF, including the Reach for the Stars Award in 2016 and the inaugural "Luminary Award" and CECS Deans Advisory Board Award in 2017.

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