



UCF

# FACULTY RESEARCH TALKS

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Zoom talk | Friday, Feb. 25, 2022 | Noon to 1 p.m.

## INDUSTRY PARTNER SPOTLIGHT:

*Solve*



PRESENTER 1:

**NAVIN  
MANJOORAN**

Chairman,  
Solve

### The Backbone of Modern Technology & Innovation

Technology and innovation enhancements have tremendous potential to transform the way we live, learn, work and play. These enhancements significantly influence organizations by creating a new playing field, sharply disrupting markets, changing the relative importance of resources, challenging system capabilities and reorganizing the basis of competition globally. Examples highlighting these enhancements will be presented.

Dr. Manjooran is the chairman of Solve, a global technology and research services company addressing critical energy, industry, medical and infrastructure challenges. For 10 years, he has served on the global leadership team of Siemens AG. Since 2010, Dr. Manjooran has been an adjunct professor in the Department of Materials Science and Engineering at Virginia Tech. He also serves as the vice chair of the advisory board (MSE, COE) at the University of Florida. He is a Fellow and board member of ASM International apart from having leadership roles in multiple global organizations. He holds a B.S. in metallurgical engineering from the National Institute of Technology in Warangal, India; an M.S. in materials science and engineering from the University of Florida; a Ph.D. in materials science and engineering from Virginia Tech and an MBA from the prestigious Booth School of Business at the University of Chicago.



PRESENTER 2:

**KAREEM  
AHMED**

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

### High-Speed Flows and Advanced Propulsion from Hypersonics and Energy to Space Rockets and Exploding Stars

High-speed reacting flows power our everyday life on earth through the heart of many propulsion and energy generation systems, such as gas turbines, internal combustion and jet engines. They also power rocket vehicles and the universe through energy produced in stars, such as in the sun, and in the most powerful explosions known in the universe, supernovae explosions. This presentation will overview of a range of phenomena recently discovered in experimental studies of high-speed and hypersonic flows.

Dr. Ahmed's research portfolio explores creative and technologically crucial research in advanced propulsion and energy research, focusing on hypersonic and supersonic turbulent reacting flows, deflagrations and detonations, high-speed compressible turbulent flows, and advanced laser optical diagnostics through experimental research and physics-based models with more than \$15 million in research funding. The research has a broad impact in terms of applications for hypersonics (featured in *PNAS Journal*), space and jet propulsion, power generation and gas turbine engines, fire safety, and extends to supernova science (exploding stars, featured in the science paper). He has received multiple honors, including the ACS-Doctoral New Investigator, the Combustion Institute Distinguished Paper and UCF's Reach for the Stars Award. He is an AIAA Associate Fellow, and an AFOSR and ONR Fellow.