University of Central Florida and Mitsubishi Power: A Rich Tradition of Collaboration, Partnership and Successes

Mitsubishi Power is part of a global company that is leading the transformation in the power generation and energy storage industries to decarbonize for the benefit of the climate and future human prosperity. As such, we have a rich history of partnering with UCF to co-develop College of Engineering and Computer Science students for their academic benefit, as well as to provide Mitsubishi Power with a talent pipeline to develop and service the technology solutions we provide. Out of that talent pipeline, we have the current and future generation of leaders to further our mission. As we transition from our role as a traditional thermal power OEM to a power and energy solutions provider leading the charge in renewables, energy storage of all durations and digital solutions, we see UCF as a key partner to work on these next solutions.

Michael Suarez leads strategy, planning and execution for the manufacturing and repair of power turbine components. He has 14 years of manufacturing experience in various roles in the power industry, including engineering, supervision, continuous improvement and manufacturing management. He holds a BS in industrial engineering from the University of Central Florida and is an established Lean Expert. Michael serves as a mentor for the U.S. Dream Academy and is a proud member of Alpha Phi Alpha Fraternity, Inc.

Shane Mickey is responsible for leading the manufacturing of new power generation equipment as well as repairing power turbine components. These responsibilities include operations over factories at Orlando Service Center in Florida and Savannah Machinery Works in Georgia. Shane has 25 years of total power industry experience in various roles, including strategy, engineering, projects, services and commercial operations. He is Six Sigma Black Belt and Project Management COE certified. He also served with distinction in the U.S. military as a naval nuclear submarine officer. He serves on the Dean’s Advisory Board for the UCF College of Engineering and Computer Science.

Hydrogen, Power Generation and a Carbon-Constrained World

Hydrogen is considered a key enabler for producing zero-carbon electricity. There has been significant increase in research on generation, storage/transportation and combustion/utilization of hydrogen over the past few years. However, economy-wide and society-wide decarbonization need to consider decarbonization of all sectors of economy, and not just decarbonization of electricity generation. In this context, technologies related to carbon capture, utilization and sequestration (CCUS), alternative sources of chemical agents, sources of process heat, waste heat recovery, thermal storage and water-energy coupling will be as important and need to be developed, leading to tremendous opportunities for today’s researchers. Only then the full cost of decarbonization can be estimated.

Dr. Kapat obtained his Sc.D. in mechanical engineering from Massachusetts Institute of Technology. He joined UCF in 1997 as an assistant professor, and was promoted to the ranks of associate professor and professor in 2001 and 2005, respectively. Since the mid-2000s, Dr. Kapat has fully focused his research activities on turbo-machineries and associated technologies for power generation, aviation and space propulsion, and created partnerships with a number of OEMs in these industries.