

Dr. Ann Bolcavage, FASM, Rolls-Royce Corporation, USA

Title: “Surface Engineering - Challenges and Solutions for Sustainable Aviation”

Abstract:

Gas turbine engine propulsion solutions will play a fundamental role in the transition to a low carbon economy for the aerospace industry. At Rolls-Royce, the decarbonization strategy is comprised of continued reductions in fuel consumption and emissions, incorporation of sustainable aviation fuels, and the development of innovative power alternatives such as electrification and hydrogen. Coating materials and surface engineering solutions will play a key part in enabling this transition. Challenges will include continued dependency on critical raw materials, increasing engine performance requirements in hot and harsh environments, and understanding how coatings will perform within novel propulsion systems. Sustainable manufacturing methods for coatings which reduce energy intensity, emissions, and environmental impacts will also require identification and incorporation in operations and the supply chain.

Biography:

Ann Bolcavage is an Engineering Fellow at Rolls-Royce and leads the strategic development of critical coating materials and advanced manufacturing technologies for high-value gas turbine engine components, incorporating products for the Civil Aerospace and Defense businesses.

Dr Bolcavage joined Rolls-Royce Corporation in Indianapolis in 2006, and her expertise includes hot section coatings for metallic and CMC components, thermal spray processing technology, and materials and manufacturing capability acquisition and industrialization. She was appointed Fellow of ASM International in 2011 and is currently a member of the ASM International Board of Trustees. Dr. Bolcavage is an honors graduate of Lehigh University and received her advanced degrees in Metallurgical Engineering at the University of Wisconsin-Madison.