IMS Seminar

Friday, March 14, 2025

11:45 AM, Science 1 - Room G01

**Coffee, tea and snacks will be served beginning at 11:30 a.m.*

Dr. Jonathan Doll

Technology Manager, Material Physics & Chemistry

GE Aerospace Research

Ph.D. Polymer Science ('11)

UConn IMS Polymer Program

(Advisor: Dr. Fotios Papadimitrakopoulos)

Material Challenges in the Aerospace Industry

Abstract: At GE Aerospace, we invent the future of flight, lift people up, and bring them home safely. Central to that mission is the ability to design, develop, and qualify new materials that meet the rigorous thermomechanical or functional properties required for the next generation of jet engines. These challenges are magnified by an increasingly complex global supply chain, which diminishes the availability of key materials either through geopolitical or regulatory drivers. The Chemistry and Material Physics team at GE Research addresses material challenges ranging from new material qualification and formulation through reducing GE's carbon footprint through use of clean fuels. Central to each of these challenge is the identification of new materials. In this talk, some of these challenges will be highlighted with respect to their impact on the aerospace industry and beyond.

Biography: Jonathan received a Bachelor's in Chemistry from Vassar College and a Ph.D. in Polymer Science from the University of Connecticut where he studied under Fotios Papadimitrakopoulos. During his studies, he focused on the synthesis and manipulation of semiconducting nanomaterials including quantum dots and carbon nanotubes. His published technical work includes papers in the journals Nature Nanotechnology and Nano Letters as well as presentations at international conferences. Immediately after his studies, Jonathan began a career at Sun Chemical as a Senior Chemist tasked with making structural colorants in the pigments industry. In 2014, he became a Group Leader of the Effect and Metallic Pigments team at Sun Chemical where his research portfolio at Sun includes work related to the design, formulation, and stabilization of metallic & pearlescent pigments and natural colorants. In 2022, Jonathan joined GE Research to lead the Chemistry and Material Physics team as a Technical Manager covering the Aviation and Power Businesses. With a more recent 2024 corporate restructure, he now leads the Chemistry team at GE Aerospace Research. His team at GE is responsible for delivering critical technologies for Energy Conversion and Storage, Sustainability, and materials qualifications across a wide range of platforms relevant to Aerospace. During his career, Jonathan filed over 20 provisional patents, published 8 papers, and received numerous innovation awards.