

# 2020 Aerospace Composite Materials Program Review

Dr. Ming-Jen Pan | August 11-13, 2020 | Virtual

## Agenda Day 1 | Tuesday, August 11, 2020

Time	Topic	Speaker
11:45 - 12:10	Virtual Review Login	
12:10 - 12:30	Welcome Remarks	Dr. Ming-Jen Pan AFOSR
12:30 - 1:00	High Performance Aerospace Matrix Resins for Advanced Manufacturing of Light Weight Structures with Programmable Melt Rheology and Cure Chemistry	Dr. Hilmar Koerner AFRL/RX
1:00 - 1:30	Characterization of Nanostructured Polymer Films	Dr. Rodney Priestley Princeton University
1:30 - 2:00	Forming True Blends: Developing New Processing Routes for Polymer-Based Nano-Composites	Dr. Marilyn Minus Northeastern University
2:00 - 2:30	<b>BREAK</b>	
2:30 - 3:00	Nanoporous Carbon Fiber Based on Polyacrylonitrile-Containing Block Copolymers	Dr. Guoliang "Greg" Liu Virginia Tech
3:00 - 3:30	An Experimental-Computational Study of Length-scale Based Toughness Enhancement in Graphene/Epoxy Nanocomposites for Structural Light-weighting	Dr. Samit Roy University of Alabama
3:30 - 4:00	Elucidating the Influence of Interfacial Interactions on the Structure and Properties of Preceramic Polymer-Based Hairy Nanoparticles and Their Derived Materials	Dr. Matthew Dickerson AFRL/RX
4:00 - 4:30	Multiscale Characterization of Molecular Damage Evolution and Toughening Mechanisms in Polymer Matrix Composites	Dr. Drhiti Nepal AFRL/RX
4:30	<b>MEETING ADJOURN FOR THE DAY</b>	

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## Agenda Day 2 | Wednesday, August 12, 2020

Time	Topic	Speaker
11:45 - 12:00	Virtual Review Login	
12:00 - 12:15	Programmatic Matter / Q&A	Dr. Ming-Jen Pan AFOSR
12:15 - 1:00	Stochastic Self-Consistent Clustering Theory for Composite Performance Prediction: from extreme value microstructure attributes to design of interphase for toughness	Dr. Cate Brinson Duke University
1:00 - 1:30	Fundamentals of Strengthening Mechanisms in Carbon nanotube (CNT)/ Graphene Nanoplatelet (GNP) reinforced Metal Matrix Composites for Aerospace Structural Applications	Dr. Tushar Bokar Cleveland State University
1:30 - 2:00	Understanding Enhancement of Strength in CNT/GNP-based Structural Composites	Dr. Gary Seidel Virginia Tech
2:00 - 2:30	<b>BREAK</b>	
2:30 - 3:00	Self-healable Lightweight Cellular Structures: Additive Manufacturing and Multifunctionality	Dr. Qiming Wang USC
3:00 - 3:30	Microtexture Development in Additive-Manufactured Hybrid Materials	Dr. Charles Brown University of Dayton
3:30 - 4:00	Design of Lightweight Cellular Glass: Lessons from Nature	Dr. Ling Li Virginia Tech
4:00 - 4:30	Lightweight, elastic inorganic metamaterials: controlling flexibility and fracture toughness through hierarchical nano-architectures	Dr. Xiaoyu "Rayne" Zheng Virginia Tech / UCLA
4:30	<b>MEETING ADJOURN FOR THE DAY</b>	

# 2020 Aerospace Composite Materials Program Review

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## Agenda Day 3 | Thursday, August 13, 2020

Time	Topic	Speaker
11:45 - 12:00	Virtual Review Login	
12:00 - 12:15	Programmatic Matter / Q&A	Dr. Ming-Jen Pan AFOSR
12:15 - 12:45	Understanding Carbon Nanotube Synthesis via Autonomous Research Systems	Dr. Benji Maruyama AFRL/RX
12:45 - 1:30	Synthesis, Purification, Characterization, and Liquid Phases of BNNTs as Lightweight Multi-functional Precursor for Aerospace Fibers and Films	Dr. Matteo Pasquali Rice University
1:30 - 2:00	Robust Nanoporous Materials Morphology Design	Dr. Ajit Roy AFRL/RX
2:00 - 2:30	<b>BREAK</b>	
2:30 - 3:00	Nanotube assemblies for structural applications: modeling the key behaviors and emergent nanostructures	Dr. Boris Yokobson Rice University
3:00 - 3:30	Mechanisms and Properties of Molecular Self-assembly and Load Transfer in Large-scale CNT Assemblages and CNT/ Carbon Fiber Hybrid Materials	Dr. Richard Liang Florida State University
3:30 - 4:00	Reaction-Induced Sintering for Fabrication of Bulk Nanoporous and Composite Metals	Dr. Matthew McDowell Georgia Tech
4:00 - 4:30	High-Temperature Measurement of Single Crystal Elastic Moduli on Polycrystalline Engineering Alloys Using $\mu$ -RUS Techniques	Dr. Matthew Cherry AFRL/RX
4:30	<b>MEETING ADJOURN</b>	