



DEPARTMENT OF CIVIL ENGINEERING

SEMINAR

Exploiting Architected Composites toward Next-generation Infrastructure with Extreme Properties and Functionalities

Professor Nan Hu

School of Civil Engineering and Transportation

South China University of Technology, China

Date: September 14, 2026 (Monday)

Time: 2:30 p.m. – 3:30 p.m.

Venue: Room 612B, 6/F Haking Wong Building, The University of Hong Kong

Abstract

A paradigm has shifted to a “materials-by-design” approach in designing next-gen high-performing structures across many length scales with extreme properties and functionalities. Despite numerous studies done on micro- and nano-scales, research efforts are lacking to make architected materials accessible to large-scale engineering applications. Here, we highlight the recent progress in our research group for integrating architected composites in structural engineering scenarios. Our results show that structural elements using versatile architected materials can achieve programmable strength, stiffness, wave propagation, sound resistance, and enhanced impact protection.

About the Speaker

Dr. Nan Hu is currently a full professor and associate dean (undergraduate studies and global affairs) at South China University of Technology, China. Prior to this position, he was a tenure-track assistant professor in the Department of Civil, Environmental, and Geodetic Engineering at the Ohio State University, USA. His Versatile Structures Lab focuses on the multidisciplinary front of innovative structures and materials, particularly tailoring the design and characterization of modular architected materials to achieve programmable properties and functionalities for next-generation resilient and adaptive structures in a wide range of length scales. He has led or participated in more than ten research projects, including those funded by the National Natural Science Foundation of China. His work has resulted in over 100 papers published in SCI journals like *PNAS*, *Nature Communications*, *npj computational materials* with more than 3,000 citations. He holds over 30 Chinese invention patents and serves on multiple committees, including the Advanced Engineering Materials and Space Engineering subcommittees of the China Civil Engineering Society, and the Education Work Committee. He is actively involved with ASCE and has served on five different technical committees. He is also a young editorial board member for journals like *Research*, a *Science* partner journal and reviews for over 70 SCI journals, including *Nature*. He has contributed to projects that received awards like the Second Prize of Guangdong Science and Technology Progress, First Prize of Guangdong Civil and Architectural Science and Technology, Second Prize of China Highway Science and Technology Progress, Second Prize of National Undergraduate Teaching Achievements, and Second Prize of Guangdong Undergraduate Teaching.

- ALL ARE WELCOME -