Stony Brook University

Department of Civil Engineering

College of Engineering and Applied Sciences

FALL 2022 SEMINAR SERIES

Dr. Reza Haghani, Ph.D.

Director of the Composite Materials and Structures Lab,
Chalmers University of Technology

Friday, September 30th, 1:00 – 1:55 PM
Frey Hall Room 201

The role of innovation in the future carbon-neutral built environment

Abstract

The construction sector accounts for nearly 25% of the global greenhouse gas (GHG) emissions and is responsible for generating over 1 billion tons of solid waste each year. It is considered to be one of the major contributors to the climate change and needs to be called upon to act and take responsibility for its direct and indirect carbon emissions. It also needs to prepare for a changing environment and build resilience against the negative impacts of the climate change. With technological breakthroughs relating to all aspects of construction and different stakeholders along the value chain, the building and infrastructure sector offers huge potential for transformational change to net-zero vision in 2050. This presentation will discuss some of the challenges in the construction sector and the opportunities provided by new materials, technologies and construction techniques. Through examples, this talk will show the potential of the market-pulled, academic research in fighting with the climate change and what is possible when academia, businesses and governmental agencies work together to achieve a common goal.

Speaker Biography

Dr. Reza Haghani is former Associate Professor of Structural Engineering in Lightweight Structures and the director of the Composite Materials and Structures lab at Chalmers University of Technology, and a visiting researcher at the University of Oklahoma. Reza's research broadly

covers the development and application of innovative materials and technologies to reduce the carbon footprint in the construction sector. His expertise is centered on the behavior, design, manufacturing and durability of fiber reinforced polymers and their applications in structural retrofit and accelerated bridge construction. Reza received his MSc in Earthquake Engineering from Tehran Polytechnique and a PhD in Structural Engineering from Chalmers University of Technology. He is an impact-oriented researcher with keen interest in implementation of research findings, the founder of two tech startups and winner of the most impactful startup prize in 2010 in Sweden. His overarching goal is to enable change in the construction sector by supporting innovation, multidisciplinary research and academic-industrial collaboration.