

Department of Civil & Environmental Engineering & Earth Science

EE/ES Series

November 13, 2017
136 DeBartolo Hall
4:00 p.m.-5:00 p.m.
Danmeng Shuai, Ph.D.
The George Washington Univ.
Department of Civil and Environmental Eng.

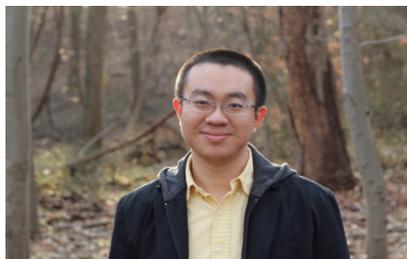
Title:

Advanced Materials for Water-Energy-Health Nexus

Abstract:

Society is currently confronting serious threats to our sustainable development including the contamination of dwindling freshwater supplies, an impending energy crisis, and infectious disease outbreaks. Innovative materials-based strategies have emerged as a promising platform for sustainable water treatment, renewable energy production, and antimicrobial applications with performance that can far exceed traditional approaches. Work presented herein will demonstrate the promise of several novel materials-based strategies for treatment of impaired water supplies, biofuel production, and pathogen inactivation. For example, an emerging photocatalyst of graphitic carbon nitride was proven highly effective for the removal of a broad spectrum of persistent organic micropollutants and pathogens under simulated sunlight and artificial indoor light, providing a sustainable route by which otherwise chemical pollutants and pathogens can be destroyed with reduced energy footprint. In addition to focusing on the fundamental science and practical engineering application of innovative materials for water treatment, this talk will also discuss the future of functional materials that can be translated into renewable energy production and infectious diseases prevention.

Bio:



Dr. Danmeng Shuai is an Assistant Professor in the Department of Civil and Environmental Engineering at The George Washington University. He graduated from Tsinghua University, P. R. China with a Bachelor of Engineering in 2005 and a Master of Engineering in 2007, both in Environmental Sciences and Engineering. He received a Ph.D. in Environmental Engineering from the University of Illinois at Urbana-Champaign in 2012. He worked as a postdoctoral research associate in the University of Iowa from 2012 to 2013. His research interests are in the development of novel materials and processes for sustainable water purification, renewable energy production, and public health protection. He has published several peer-review journal articles in Environ. Sci. Technol., ACS Appl. Mater. Interfaces, ACS Sustainable Chem. Eng., ACS Catal., etc. His current research is supported by National Science Foundation and US Department of Agriculture.