EEE Research Seminar
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Peter J. Vikesland, Ph.D.

Nick Prillaman Professor
Department of Civil and
Environmental Engineering
Virginia Tech

Nanobiotechnology Enabled Sensing of Current and Emerging Pandemic Threats

Abstract
The world is emerging from the darkest days of the COVID-19 pandemic. This pandemic, caused by the global spread of the SARS-CoV-2 virus, has illustrated the poor performance of existing monitoring approaches whose aim is to quantify the environmental aspects of such dissemination. Recent advances in both nanotechnology and biotechnology, however, enable the development of novel alternatives are more sensitive and potentially more cost-effective than existing approaches. In this presentation, we will present work conducted to design and test plasmonic and nanopore-based platforms for detection of both current (SARS-CoV-2), and emerging (influenza and antimicrobial resistant organisms), pandemic threats in both water and air.

Bio
Dr. Peter J. Vikesland is the Nick Prillaman Professor of Civil and Environmental Engineering at Virginia Tech. He received his B.A. in Chemistry from Grinnell College in 1993 and M.S. and Ph.D. degrees in Civil and Environmental Engineering from the University of Iowa in 1995 and 1998. Dr. Vikesland's research focuses on the development of nanobiotechnology enabled sensors for detection of environmental contaminants. His group is currently focused on spectroscopic approaches for detection of air- and water-borne bacteria and viruses. He is a past President of the Association of Environmental Engineering and Science Professors (AEESP), is a U.S. National Science Foundation CAREER awardee, the recipient of the 2018 Walter Weber Research Innovation Award from AEESP, and is the Editor-in-Chief of *Environmental Science: Nano*.