Department of
Chemical and Environmental Engineering

2014—2015 Seminar Series

Friday, February 20, 2015
9:10—10:00 AM
WCH 205/206

Peter Vikesland

Professor

School of Civil and Environmental Engineering

Virginia Tech

'All That is Gold Does Not Glitter' – Environmental Applications of Gold Enabled Plasmonics

Clean air and clean water are the cornerstones of environmental engineering and environmental science. To assure the quality of these matrices, we currently rely upon a broad range of monitoring techniques - many of which are outdated, unreliable, or excessively expensive. Recent advances in both nanotechnology and biotechnology, however, are poised to provide novel and previously unattainable alternatives that have the potential to be more sensitive as well as more cost-effective than many existing methods. In this presentation, we will present work conducted to develop gold enabled plasmonic platforms that facilitate detection of inorganic, organic, biologic, and nanoparticulate contaminants. As will be shown, both light spectroscopy and Raman spectroscopy can be used to detect and quantify environmental contaminants in a range of different media.

BioSketch: Peter Vikesland is a Professor of Civil and Environmental Engineering at Virginia Tech where he directs a research group examining the environmental applications and implications of nanotechnology. He received his B.A. degree in Chemistry from Grinnell College in 1993. He then received his M.S. and Ph.D. degrees in Civil and Environmental Engineering from the University of Iowa in 1995 and 1998, respectively. After completing a postdoctoral fellowship at Johns Hopkins University he joined the faculty at Virginia Tech in 2002. Vikesland is a NSF CAREER awardee and was the 2012 UPS Foundation Visiting Associate Professor of Civil and Environmental Engineering at Stanford University. Vikesland currently serves as the Co-Director of the Virginia Tech Sustainable Nanotechnology (VTSuN) Program and as Director of the VTSuN Interdisciplinary Graduate Education Program.

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