UNIVERSITY of HOUSTON

CULLEN COLLEGE of ENGINEERING

Department of Civil & Environmental Engineering

Professor Gregory Lowry
Carnegie Mellon University

Environmental and Biological Fate Processes of Engineered Nanomaterials and their Implications for Risk

Monday, April 23, 2012

11:15 a.m. Refreshments
11:30 – 12:30 p.m. Seminar
Room 102-D Engineering Bldg. 1, UH

Abstract

Many engineered nanomaterials (ENMs) have extraordinary novel properties and do not have naturally occurring analogs. It is therefore prudent to assess their potentially harmful impacts in parallel with their rapid development. Forecasting the potential risks from ENMs requires an ability to predict ENM fate and bioavailability in the environment. ENMs are highly dynamic in environmental and biological systems, making it important to understand the range of possible geochemical transformations of ENMs and how those transformations affect their properties, bioavailability, and toxicity.Important transformations include adsorption of biomacromolecules, biodegradation, oxidation/reduction reactions, and sulfidation. Laboratory and field scale studies describing these transformations, and their effects on ENM fate, bioavailability, and toxicity are discussed.

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About the speaker:

Greg Lowry earned his bachelor's degree in chemical engineering (University of California at Davis), and his MS (University of Wisconsin at Madison) and PhD (Stanford University) degrees in Civil & Environmental Engineering. He joined the Department of Civil Engineering at Carnegie Mellon University in 2001 and holds the rank of Professor. Dr. Lowry conducts fundamental and applied research in the areas of environmental nanotechnology and environmental remediation. His work is aimed at understanding how the properties of engineered nanomaterials map onto their potential for risk. He is also is developing and optimizing in situ groundwater and sediment remediation technologies employing polymer modified particulate remedial agents including nano-sized zerovalent iron for groundwater remediation and reactive electrodes for sediment caps. He uses both experimental and modeling approaches to evaluate the reactive characteristics of various materials, design and evaluate emplacement methods, and characterize remediation performance. He teaches courses on physicochemical processes of organic chemicals in aquatic systems, environmental engineering, environmental nanotechnology, and environmental sampling and sample analysis.

Parking: Go to UH Entrance No. 1 (Exit I-45 South to Spur 5 and take a right at University Blvd.). At the Visitors Information Center, ask for the Cullen College of Engineering and parking instructions. For more information call Elaine Gildea at (713) 743-4251.

RSVP BY FAX TO (713) 743-4260 with information below by March 30, 2012

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