



DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

CEE Seminar Series

Bacteria and Buckeyballs: the microbial response to fullerene water suspensions

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Public acceptance of nanotechnology requires an understanding of how nanomaterials behave in the environment. Fullerenes compose a class of nanomaterials which show potential for imminent medical, industrial, and technological applications. One model fullerene, C_{60} , forms fullerene water suspensions (nC_{60}) upon extended exposure to water or after introduction to water via a solvent. Bacterial response to nC_{60} not only demonstrates the impact of nC_{60} on the environment, but may be an indication of the reaction of higher organisms. This research monitors the effects of nC_{60} on the bacteria *Escherichia coli* and *Bacillus subtilis*. nC_{60} exhibits antibacterial properties, with several factors, like particle size and ionic strength, mitigating the toxicity. The effects of nC_{60} on a soil microbial community and on biofilm formation are also assessed.

Bio

Delina Y. Lyon is a doctoral student under the direction of Pedro Alvarez in the Civil and Environmental Engineering Department at Rice University in Houston, Texas. She received her B.A. from St. Mary's College of Maryland and her MS in Microbiology from the University of Georgia.

Monday, November 27, 2006
3:45 PM
ML 251
Refreshments will be served at 3:30 PM