

Fate and Transport of Carbonaceous Nanomaterials: Progress and Data Gaps

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Fullerene's discovery in 1985 and nanotubes' in the early 90's have fueled nano-scale research and commercialization. Graphene, the planar allotrope of carbon, has come to the forefront of research in the middle of the last decade. It is confirmed that yearly production of carbon nanotube alone is more than 2 kilotons/year and will likely be doubled by 2015. Reliable environmental exposure and associated risk of these carbonaceous nanomaterials are thus of paramount importance. This talk will present a discussion on the current status of environmental fate, transport, and transformation of fullerenes, nanotubes, and graphene and will identify key data gaps; analyzing nearly 200 environmental health and safety articles, published over the last decade. The data gaps will be discussed from materials properties and systems perspective and specific examples will be discussed to highlight the importance. The objective of this talk is to encourage an intellectual discussion on research needs for fate, transport, and transformation of carbonaceous nanomaterials.

Short Biography: Navid Saleh is currently an Assistant Professor of Civil and Environmental Engineering at the University of South Carolina. He will begin his tenure as an Assistant Professor at the University of Texas at Austin in January 2013. Before joining USC in January 2009, Dr. Saleh was a post-doctoral trainee at the Chemical Engineering Department, Yale University, New Haven, CT (since June 2007). Dr. Saleh received his Ph.D. from Carnegie Mellon University, Pittsburgh PA, in May 2007 in Civil and Environmental Engineering and his BS degree was completed at Bangladesh University of Engineering and Technology, Dhaka, Bangladesh in Civil Engineering in 2001. His research interests include (1) applications and implications of nanomaterials, (2) evaluating nano-bio interactions for environmental and biological systems, (3) nanomaterials for advanced infrastructure, and (4) engineering education. Dr. Saleh's lab is currently funded by the National Science Foundation (NSF), National Institute of Health (NIH), US Air Force, SCDOT, and private sponsors (GS E&C Research Institute). Dr. Saleh has published nearly 40 peer reviewed journal articles and book chapters. He has also served as session chairs and workshop speakers in national and international conferences (ACS, AIChE, SOT etc.).

