



Nanomaterials: Applications and impacts

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The fate and behavior of nanomaterials in natural systems and their environmental impacts are major topics in Environmental Sciences. The increased production of engineered nanomaterials, associated with novel applications and intended or unintended introduction into the environment raise concerns regarding potential environmental impacts. Along with the evaluation of the risks associated with nanomaterials after application/ release in the environment, the benefits of new applications of nanomaterials must be determined, so that the benefit to risk ratio may be optimized through efficacious but safely designed materials. This symposium will be divided into two sub-sessions: the first sub-session is on the applications of nanomaterials in agriculture and nutrition; and the second sub-session is on the fate of nanomaterials in the environment. For both topics, key areas of interest include how transformations of nanomaterials drive changes in speciation and bioavailability, their transfer/ transport in environmental media, and their interactions with biota (uptake, trophic transfer, induced toxicity), or their role in biogeochemical cycling of nutrients and trace elements. There is also interest in papers that address analytical challenges including i) the study of low concentrations of nanomaterials under realistic conditions in complex systems, ii) the transient character of bulk and surface properties of nanoparticles, iii) the effect of the matrix or formulation nanomaterials behaviors and effects.