ENVIRONMENTAL IMPLICATIONS AND APPLICATIONS OF NANOTECHNOLOGY: FULLERENE-BACTERIAL INTERACTIONS

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Nanotechnology is the ability to work at the molecular level, atom-by-atom, to create larger structures with fundamentally new molecular organization and novel properties and functions. The widespread production of engineered nanomaterials started in the 1980's, and their rapid incorporation into a variety of consumer products and applications is outpacing the development of appropriate regulations to mitigate potential risks associated with their release to the environment. Therefore, we have been conducting research to improve our understanding of the transport, fate, reactivity and ecotoxicity of several nanomaterials that have a relatively high probability of environmental release. On the other hand, many nanomaterials also hold a significant potential to develop new capabilities to remediate past environmental damage and alleviate present and future environmental challenges. This seminar will illustrate these issues by considering the antibacterial properties of fullerenes within the context of environmental implications and applications.