

# Carbon nanomaterials may disperse more widely in waterways

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Carbon nanotubes (CNTs) released to the environment in the coming era of industrial-scale production could spread through lakes, rivers and other waterways more widely than previously anticipated, scientists are reporting in a study scheduled for the January 1, 2007, issue of ACS's *Environmental Science & Technology*.

The Georgia Institute of Technology's Jaehong Kim and colleagues point out that industrial-scale production facilities for CNTs are now under construction in order to meet anticipated demand for these nanomaterials in a range of commercial applications. Gaps, however, still remain in understanding of the possible health and environmental effects of CNTs, they add.

CNTs are extremely hydrophobic - repelled by water - and clump together rather than dispersing widely in pure water. That led to reduced concerns about widespread dispersion of CNTs in the water environment. The new study, however, showed that CNTs interact with natural organic matter, which is present in lakes and rivers, in ways that lead to wider dispersion.

The researchers conclude: "These findings suggest that dispersal of carbon-based nanomaterials in the natural, aqueous environment might occur to an unexpected extent following a mechanism that has not been previously considered in environmental fate and transport studies."

Source: American Chemical Society

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