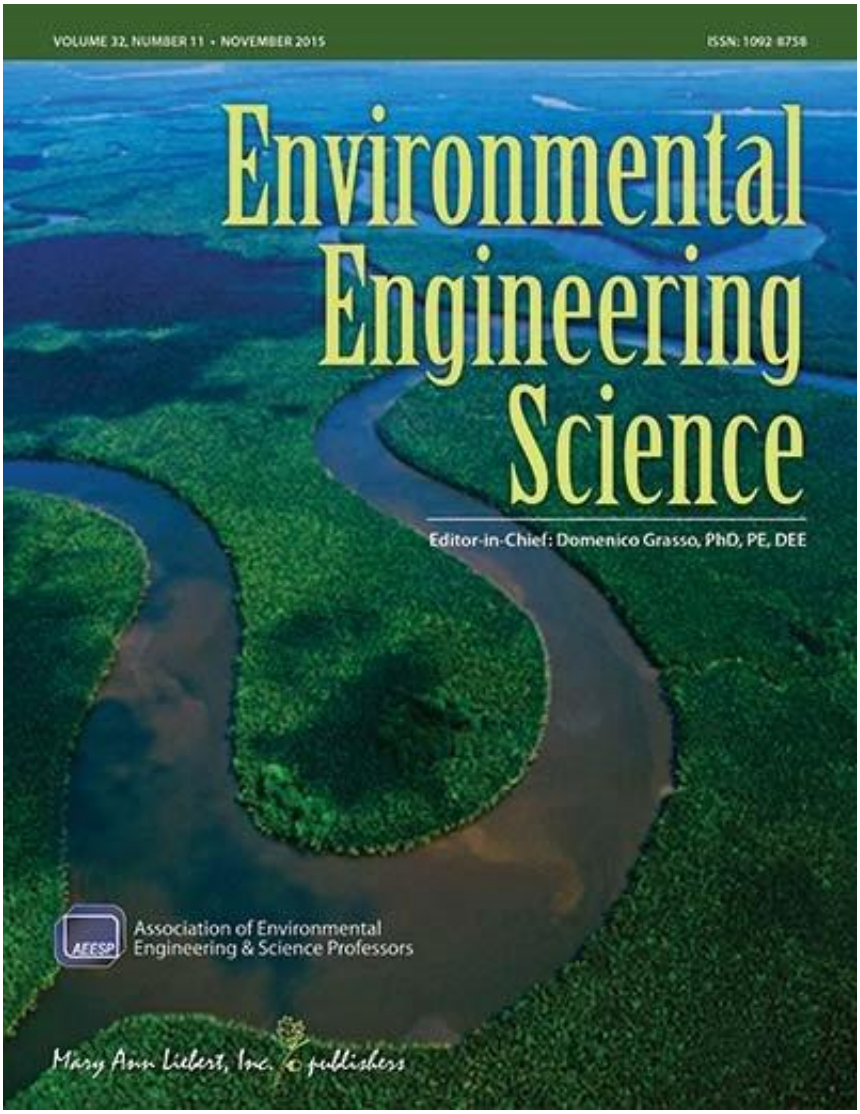
Up to 90 percent of drinking water contaminants in ultrasonic humidifier aerosols are inhalable

November 24 2015



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A new study of five drinking water samples of different quality shows that ultrasonic humidifiers aerosolize and emit dissolved contaminants that can be inhaled, including minerals and metals. For an ultrasonic humidifier, 90% of the aerosols formed are in the respirable range, which may have negative effects on human health depending on the quality of the water source, as reported in the study published in *Environmental Engineering Science*.

In "Emission of Inhalable Dissolved Drinking Water Constituents by Ultrasonic Humidifiers", Amanda Sain and Andrea Dietrich, Virginia Polytechnic and State University (Blacksburg), describe the results of testing five different water quality types in ultrasonic humidifiers. The drinking water samples used to fill the humidifiers ranged from low to high levels of total dissolved solids (a common measure of mineral content), hardness, and iron content. The researchers evaluated the aerosols emitted for the range of particle sizes and for evidence of dissolved metal and nonmetal constituents.

"This is a very interesting study that identifies another path of human uptake of constituents in drinking water—that of inhalation," says Domenico Grasso, PhD, Editor-in-Chief of *Environmental Engineering Science* and Provost, University of Delaware. "Health consequences appear to be dependent on the nature of the water quality used in the humidifiers."

More information: The article is available to download for free on the *Environmental Engineering Science* website until December 24, 2015.

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