

Philip Demokritou, PhD



Dr Demokritou's research interests are primarily in the areas of nano-aerosol science and technology with emphasis on the elucidation of particulate matter (PM) associated health effects and environmental health and safety implications of engineered nanomaterials (ENMs). His particle research has involved the development of personal PM monitoring systems for use in exposure assessment and epidemiological studies and methods for the physico-chemical and in-vitro/in-vivo toxicological characterization of nanoparticles. Such novel methods linking particle exposures to toxicology and adverse health effects have been widely used by scientists in the field and also adopted as reference methods by scientists at US EPA, Environment Canada and other PM exposure assessors around the world and helped in advancing the field

of particle health effects. His current research focuses on nanosafety and nano-bio interactions and the role of ENM structure on bioactivity. His nanosafety research has involved development of in-vitro screening approaches for nano-specific effects (DNA damage, epigenetics, translocation of ENMs across biological barriers, etc), "safer by design" approaches for families of ENMs such as metal and metal oxides, development of advanced tools and framework approaches for in-vitro/in-vivo dosimetry, linking exposures from nanoparticles released across life cycle of nano-enabled products (NEPs) to toxicology and adverse health effects, and environmental nanotechnology applications for pathogen inactivation. Dr Demokritou is currently the Director of the Center of Nanotechnology and Nanotoxicology at Harvard University (www.hsph.harvard.edu/nano). He is also currently the PI and Director of the Harvard-NIEHS Center for Nanosafety Research He served as a co-PI of the Harvard-EPA PM Health Effect Center (1999-2010, US EPA star grant) and as the Director of Harvard-Cyprus International Institute for the Environment and Public Health from 2005-2008 and participated in the development of graduate level degree programs in the area of Environmental Health. He served as PI, co-PI or co-investigator on several grants funded by NIH, EPA, NIOSH, NSF, USDA/NIFA, CPSC and EU research framework (FP7). He holds 6 international/US patents and inventions licensed by Harvard to various companies in the fields of air pollution and nano-biology. He is a co-author of two books, numerous book chapters and hundreds of articles in leading journals and conference proceedings in the particle health effect and aerosol engineering fields. Dr Demokritou's innovative research was highlighted in major mainstream media and online magazines including articles published in the Economist, NanoWerk, Chemistry world, The Scientist, ACS C&En News, MIT News, Harvard Gazette, NBR news. Dr Demokritou is currently an Associate Professor at Harvard School of Public and a founding co-Editor in Chief of NanoImpact journal, a journal that focuses on all aspects of nanosafety research (Elsevier)