

Nanoplastics in the environment - A new research paradigm of aquatic contamination

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Abstract: Contamination of surface and groundwater with nanoplastics constitute a poorly understood hazard for human, domestic animals, and wildlife. By definition, microplastics are plastic particles <5mm and nanoplastics are plastic particles <100 nm. Manufactured particles for industrial purposes, e.g., paints, adhesives, electronics, and cosmetics are called primary nanoplastics; those resulting from fragmentation of larger pieces of plastics are referred to as secondary nanoplastics. A PubMed search for the term “microplastic” yields 1117 results, while the term “nanoplastics” only yields 71 results, indicating nanoplastics is emerging as a new field of study and our current knowledge of nanoplastics in the environment is still very limited. This presentation highlights 1) the steady increase of laboratory research on nanoplastics, 2) sources and fate of primary and secondary nanoplastics in the aquatic environment, and 3) creating a dialogue for research needed to increase our understanding of the health effects of nanoplastics

Bio: Swee Teh earned a degree in comparative pathology in the School of Veterinary Medicine at the University of California-Davis. He is the Director of Aquatic Health Program (AHP) in the Department of Anatomy, Physiology, and Cell Biology in the School of Veterinary Medicine at the University of California-Davis. AHP mission is to promote and protect the wellbeing of all aquatic species and their environments by investigating the anatomical, behavioral, molecular, and physiological components of individual organisms and applying them to the ecosystem scale. He is also the director of the Aquatic Toxicology Laboratory; a State Certified Laboratory engaged in monitoring and assessing ambient water quality and aquatic ecosystem health.