

Microplastics Research Trends and Future Challenges in the Korean Environmental Fields

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Abstract

Recently, environmental pollution caused by microplastics has emerged as an important environmental problem worldwide. Modern society entered the plastic age in earnest when DuPont started selling nylon invented by American chemist Wallace Hume Carothers in the early 1900s, which is thought to be a change that surpasses the Bronze Age and Iron Age. Plastics have been used in large quantities due to their convenience, but management in consideration of environmental impacts is insufficient. With an increasing use of plastic, considerable plastic waste is generated, threatening the environment and public health. In particular, changes in living patterns in urban areas have significantly impacted the rate at which plastic waste increases every year. Thus, governments in many developed countries have implemented numerous policies to reduce plastic waste generation.

In particular, in April 2018, there was a problem with the collection of plastic waste in Korea, which resulted in many changes in plastic-related policies and research fields. The Ministry of Environment is promoting research on integrated life cycle of microplastics generation, behavior, risk assessment and management. First, the generation status and material flow of waste plastics generated as waste are analyzed, and the source of their generation is investigated



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by identifying the route through which they are exposed to the environment. In addition, the Korean government is preparing the analytical method for microplastics and is conducting research on the behavior and risk by investigation the contamination status. In this presentation, we would like to introduce the research projects and contents being promoted in the environmental field. In addition, I would like to briefly introduce the research on the development of integrated microplastics management technology to be promoted in 2022.

Keywords: Microplastics; Plastic Waste; Life Cycle; Risk Assessment

Biography

Dr. Sun Kyoung Shin is currently a director at the National Institute of Environmental Research. Dr. Shin received her PhD in chemical engineering at New Mexico State University. Following her PhD, she served as a senior researcher at the Ministry of Environment. She has expertise in hazardous waste management and environmental pollutant analysis, with a particular focus on waste recycling and waste to energy.