Introduction of convergence cluster for human and environmental safety research of (nano)microplastics in Korea

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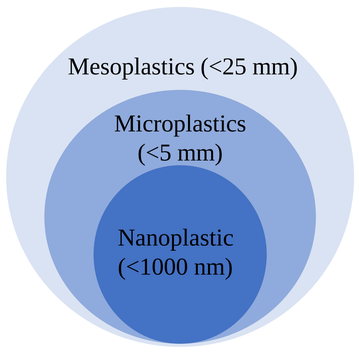
Abstract

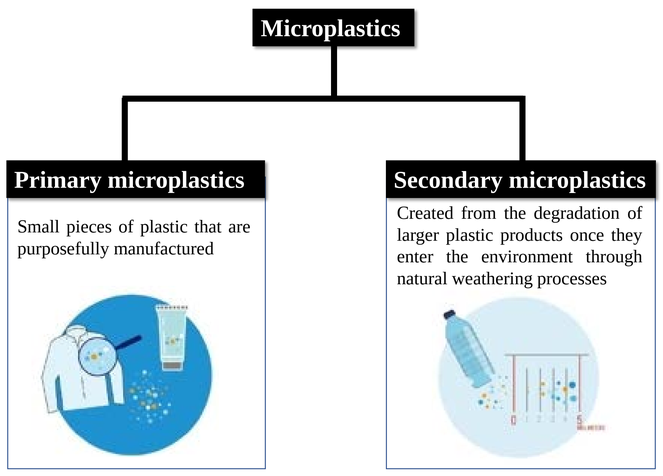
Microplastics are defined as plastic particles under 5mm in size. Microplastics are classified into two major categories: (1) artificially manufactured primary microplastics and (2) physically or chemically decomposed secondary microplastics. (Nano)Microplastics are universal throughout marine and terrestrial ecosystems. Microplastics are contaminating the air, the water, and the food we eat and can be a risk to human and environmental health. Ingestion of (nano)microplastics by marine organisms has impacts on major physiological functions (growth, behavior and respiration). In ecotoxicology, (Nano) microplastics may also play a role as vectors for toxic substances like persistent organic pollutants (POP) or hydrophobic organic chemicals (HOCs) etc.

With the support of National Research Council of Science & Technology (NST), (nano)microplastic convergence clusters project was launched in 2018 in the purpose of bring together experts from various fields to establish a community of researchers. It consists of three subcommittees: exposure, toxicity, and risk assessment. Experts from each subcommittee exchange ideas and expand research networks through regular meetings. In April, a workshop was held to examine the problems of (nano)microplastics faced by sharing the research trends and results with international experts and to find necessary technical and scientific solutions through expert discussions. Through this project, experts from various fields will gather knowledge and comprehensive research to solve problems of (nano) microplastics and lay the foundation for establishing safety in the environment and humans. Moreover, experts will try to seek required technical and scientific solutions against upcoming threats of (nano) microplastics, which are not yet problems.

What are microplastics?

- Microplastics are small pieces of plastic, less than 5 mm in length.





Subcommittee

- It consists of three departments and participates in the following organizations:

Cluster activity

- Find out the topics of research through meetings
- Microplastics press publicity
- Network expansion through meetings
- Research presentation

▲Meetings for research topic

▲Parliamentary debate on microplastics

▲ Research presentation workshop

▲ Press interview on microplastics

International Workshop for microplastics 2019

- The purposes of workshop titled「International Workshop for Microplastics 2019: Current State of Art Knowledge and Future Directions in (Nano)Microplastic Research」 are to recognize microplastics problems that we are facing, and to see how to deal with them by sharing the latest research achievements in (Nano)microplastic research field. Moreover, by discussing with eminent domestic and international experts, we were try to seek required technical and scientific solutions against new (upcoming) threats of (nano)microplastics, which are not yet problems.

The topics for need to discuss on microplastics risk assessment

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