

Master thesis proposal: Microplastics in indoor air

Background

Recently, the role of microplastics in indoor air quality management has emanated as a potentially important issue. Preliminary investigations have indicated that surprisingly little is known about the presence of microplastics in indoor air and its potential health and environmental impacts.

Ecoloop is a company that enable development of resource management methods. Working with researchers, consultants at Ecoloop has created methods for avoiding leakage of microplastics from soccer fields with artificial turf. In this project Ecoloop is working with a large Swedish company which have an interest in assessing the impact on health of microplastics in air. This knowledge will be used to create solutions which increase wellbeing for the company's customers.

Description of the challenge

Very little is known about the presence and health effects of microplastics in air. This makes it hard to make scientifically sound decisions on communication and product development for companies with products with a potentially positive effect on microplastic levels in air. The collaborating companies would like to extend the knowledge base on indoor air quality with a focus on microplastics. This is a relatively new research field with room for pioneering work.

Purpose, aims and methods

The purpose of the proposed thesis work is to provide a scientifically sound starting point for future air quality product development. As this is pioneering work the focus of the thesis will shift as the work progresses, depending on what information can be found.

Aims for the work will be developed by the student in collaboration with the supervisors at Ecoloop, Ecoloop's collaboration partner and the university supervisor. Some possible aims are:

- Assessing the health impact of microplastics in indoor air.
- Assessing how the size and shape of microplastic particles impact their properties
- Mapping how microplastic particles spread and move in air in comparison to VOCs.
- Propose improvements of data collection methods and areas for further study.
- Mapping sources of microplastics in air.

The thesis study will consist of a literature study and practical tests in a laboratory environment. It will also consist of an analysis of the research data which will result in suggestions for future focus areas for product development. The student will be placed at Ecoloop and work in collaboration with specialists from Ecoloop's collaboration partner.

Applicants

We are looking for students with an interest in applied research and development of research methods. Some examples of suitable study backgrounds include chemistry/chemical engineering, environmental engineering, materials science or environmental medicine.

Contact

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