

## Master-Thesis ETH

We are looking for a motivated Master-student in environmental sciences or in a related discipline.

Engineered nanomaterials (ENM) pose many new scientific questions on risk assessment as concerns have been raised of their potential toxicity and life cycle impacts. ENM are already contained in many products and high growth rates are expected in the next years. During various stages of the life cycle of a product ENM can be released, e.g. during production, use, recycling or disposal.

This project focuses on the behavior of ENM in landfills.

The development of a generalized model for technical systems (structure for fate and behavior of engineered nanomaterial in landfills) will be in the focus of the work that is based on data collection and expanded by computer based stochastic modeling.

The particular challenge in this work for landfills will be to collect information as well as understand and model nanomaterial fate variability and uncertainty from a long-term perspective that has to deal with a very thin data base available.

We want to find out whether and how much nanomaterial survives the deposition process or is transformed into different material forms or generally degraded.

From the not degraded or transformed part we want to find out how much is emitted into the surrounding environment (air, water, soil).

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