

Title: Treatment of Per- and Polyfluoroalkyl Substances (PFAS) contaminated leachate

Per- and Polyfluoroalkyl Substances (PFAS) are widely used in consumer and industrial products due to their unique chemical-physical structure which makes the molecules both hydrophobic and lipophobic. PFAS have been used for more than 50 years in a wide range of applications, including textiles, food contact material, coatings, aqueous film-forming foams (AFFF), cosmetics and for medical equipment.

The strong C-F bond makes the molecules resistant to degradation in the environment and PFAS are currently under scientific and regulatory scrutiny as their harmful environmental and health effects are recognized. The many years and widespread use have caused ubiquitous contamination in the environment. PFAS contaminated sites and landfills generate PFAS contaminated leachate that needs to be handled with care to ensure it does not expose further to the environment. More research is needed to ensure a sustainable management and treatment of PFAS contamination in aquatic media from e.g. landfill leachate and soil washing processes.

The PhD work will include laboratory, pilot scale testing and field work focusing on:

- The effect of complex landfill leachate matrices on efficiency of treatment facilities.
- Investigate concentrations of PFAS in the aqueous fractions resulting from soil washing processes.