



MARIA K. BJÖRNSDOTTER is a doctoral student in chemistry at the Man-Technology-Environment Research Centre at Örebro University since 2017. Her research has focused on determining the occurrence of ultra-short-chain perfluoroalkyl acids (PFAAs) in the environment by utilizing a novel analytical approach for their analysis.

Ultra-short-chain PFAAs are man-made chemicals that have received much attention due to their persistence and mobility in the environment. Concern has been raised as these substances can contaminate ground and drinking water with potential adverse effects on both humans and the environment. Supercritical fluid chromatography was used to investigate the environmental occurrence of these previously not detected compounds in Sweden and in the Norwegian Arctic. Sampling sites included contaminated areas, surface water, groundwater, precipitation and surface snow, and sources of contamination was evaluated. An assessment on the contamination of Lake Vättern was performed looking at input pathways of ultra-short-chain PFAAs from diffuse and local contamination sources. In addition, the role of atmospheric oxidation of volatile precursor compounds for the occurrence of ultra-short-chain PFAAs in Sweden as well as in remote locations in the Norwegian Arctic, far away from potential point sources, was investigated. The results from this project have provided additional knowledge about ultra-short-chain PFAAs in terms of their environmental occurrence, sources and distribution.

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Chemistry



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