**Comprehensive Monitoring of PFASs Precursors in Industrial and Municipal Wastewater Treatment Plants**

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Perfluoroalkyl and polyfluoroalkyl substances (PFASs) are anthropogenic and broadly distributed via aqueous compartments around the world. Wastewater treatment plants (WWTPs) have been identified as a significant pathway for the introduction of PFASs to natural waters. Several studies, e.g. from 2006, 2010 and 2011 showed higher concentrations of PFASs analysed in the effluent of WWTP compared to the corresponding influent[1-3].

One reason for this might be the biotransformation precursor substances, which were converted into known and analysed PFASs. Precursor substances can be fluorotelomer compounds, such as fluorotelomer alcohols (FTOHs), which have been shown to degrade to perfluoroalkyl carboxylic acids (PFCAs). Therefore, a comprehensive study was carried out in the framework of a project funded by the German Environmental Agency, sampling six municipal and industrial wastewater treatment plants located in Europe.

A total of 66 PFASs were monitored using HPLC-ESI-MS/MS and GC-EI-MS methods. For wastewater treatment plants, eight influent samples and four effluent samples were taken over a period of four weeks. Additionally, eight corresponding air samples above the influent were taken in order to verify the presence of volatile PFASs as well as four grab sludge samples to account for adsorbable PFASs. Various findings of both, precursors, biotransformation intermediates and stable PFASs will be presented and discussed.

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2. Pan, Y., et al., *Evaluation of perfluorinated compounds in seven wastewater treatment plants in Beijing urban areas.* Science China Chemistry, 2011. **54**(3): p. 552-558.

3. Kunacheva, C., et al., *Mass flows of perfluorinated compounds (PFCs) in central wastewater treatment plants of industrial zones in Thailand.* Chemosphere, 2011. **83**(6): p. 737-744.