Technology for Water

ENVIROCHEMIE

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Joint research project EmiStop has been started

Examination of microplastic impurities in industrial wastewater

Industrial wastewater is one of the pathways for microplastics into the environment. Since January 2018 the joint research project EmiStop is examining how many of these microparticles are actually contained in wastewaters of various industrial sectors. Under the auspices of EnviroChemie GmbH, partners from industry and science (inter 3 GmbH, BS-Partikel GmbH, TU Darmstadt and HS RheinMain) will record plastic emissions in industrial wastewater streams with innovative detection methods. For the first time, reliable information on the types of plastic, their concentrations and the number of individual particles will be available. The project partners also plan to develop sustainable technologies and solutions to prevent industrial emissions of microplastic into the environment by the end of 2020. The Federal Ministry of Education and Research (BMBF) is funding the project EmiStop with 1.9 million euros.

Regarding technology development, established processes for wastewater treatment will be analyzed and evaluated. A tracer test will be customized specifically for this purpose. It will provide the possibility to carry out experiments with various industrial wastewaters - of e.g. plastic producing and processing companies, industrial parks or large-scale laundries. This way researchers will be able to verify how effectively different cleaning processes in industrial wastewater treatment plants can remove microplastics and how significant industrial emissions of microplastics actually are.

In addition to the process optimization, the targeted development of specific flocculants to improve the retention of microplastics will be focused on. The optimized or newly developed technologies and flocculants will also be applicable in existing wastewater treatment plants.

The project partners will also include socio-economic aspects in their work. In cooperation with industrial companies, they will examine measures for both the internal recovery of plastics and the prevention of microplastics entering industrial wastewater. These will be evaluated with the involvement of stakeholders from academia, associations and other interest groups. The aim is to find out if and how these measures can be implemented. An accompanying expert survey on the future development of technological and regulatory frameworks will also provide additional overview in the current discussion about microplastics.

The joint research project EmiStop is funded by the BMBF as part of the research focus "Plastics in the environment - sources, sinks, solutions" within the flagship initiative Green Economy of the BMBF-framework programme "Research for Sustainable Development" (FONA³).







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