

Optimized materials and processes for the separation of microplastic from the water cycle - OEMP -

The increasing application of plastic products during the last 60 years, entailed an undesirable plastic input to the environment. Small plastic particles (microplastic) are able to reach the water cycle by households and urban areas. Microplastics are defined as particles smaller than 5 mm and could be subdivided into two groups: Primary microplastics are engineered materials used as product additives for cosmetics, peelings and cleaning agents. Secondary microplastics are produced from the embrittlement of common plastic products, due to physical, chemical or biological degradation processes.

This project intends the development of new restraining materials and processes for the separation of various microplastic particles (different in size, shape, type of plastic). Different entry pathways of the urban water cycle in city areas (effluent from wastewater treatment plants, combined sewer overflows, street drainage) are investigated for the purposes of optimized technical approaches, to ensure a sustainable water economy with high class standards that achieve the protection of the surface waters. Therefore, a high class assurance is needed, that examines the different technical and natural systems with regard to their retention qualities. An integrant is an evaluable methodology of these investigations, as well as a first benchmark of the purification processes, which are developed during the project.

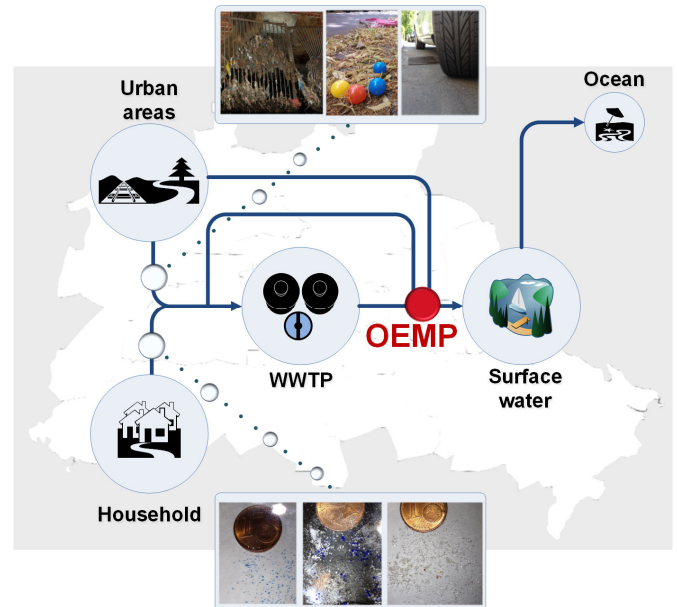


Figure1: Project focus of the BMBF - joint project OEMP



Figure 2: Project partners of the research association

Project goals

- Development of innovative restraint systems
- In-situ experiments of innovative materials and installation engineering
- Retentions and separation of microplastic from the effluent of wastewater treatment plants, combined sewer overflow systems and street drainage

Project management

- Gebrüder Kufferath AG (GKD)
- Department of Urban Water Management TU Berlin

Project duration

- 01.04.2016 - 30.09.2018

BMBF - Call

- „MachWas – Materialien für eine nachhaltige Wasserwirtschaft“



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