The MiPlaFi 2.0: Washing Clothes With a Clear Conscience

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The project deals with how microplastics can be filtered out of washing machine wastewater. 35% of the microplastic released into our environment comes from washing machine wastewater. Our textiles are increasingly made of synthetic fibers, which detach during the washing process and end up in sewage. From there, they are distributed in the global water cycle. Via sewage sludges, they end up on our fields and, ultimately, in our food. It is the responsibility of the user to retrofit the washing machine with an external filter unit. However, this needs to be implemented by the end user. The project aims to show that the standardization of microplastic filters in washing machines is possible. The idea is that every washing machine in Europe has a lint filter. The manufacturers must implement a microplastic filter behind the lint filter during the design. The microplastic filter is cylindrical and serves as a support basket for the filter mesh, which is inserted with an upward opening and fastened with a tension ring. The microplastic filter can be screwed directly behind the lint filter. The pumping process takes longer when the filter is filled with microplastic particles. A signal is given, and the washing machine can only be restarted after replacing the filter material. To check if the filter worked, the water samples were chemically treated with the Fenton reaction and examined under the microscope. Likewise, the topic is taken to politics and industry to achieve a standard filter regulation in the long term.

Awards Won: