

# **Microplastics in Water: Addressing Challenges and Exploring Sustainable Solutions**

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## **Extended Abstract**

The presence of microplastics in water bodies designated for both drinking water supply and as receptacles for wastewater has emerged as a significant concern. This has underscored the necessity of addressing associated challenges and seeking sustainable solutions. Microplastics, characterized by particle sizes ranging from 1 to 5 mm, demand effective removal strategies. Various methodologies have been explored to address the removal of microplastics and microfibers from water. Among various methods, these include coagulation-flocculation, sand filtration, advanced oxidation processes, and hydroponics. This presentation aims to offer an overview of key findings derived from various research on microplastic removal from water, including those contributions from the UCL Water Research Group. The research findings highlight the potential of these technologies in effectively removing microplastics and microfibers. Nevertheless, continuous research and development are essential to optimize their effectiveness and ensure sustainability. Notably, advanced oxidation processes pose a specific challenge in the treatment of microplastics and microfibers that requires focused attention and resolution.