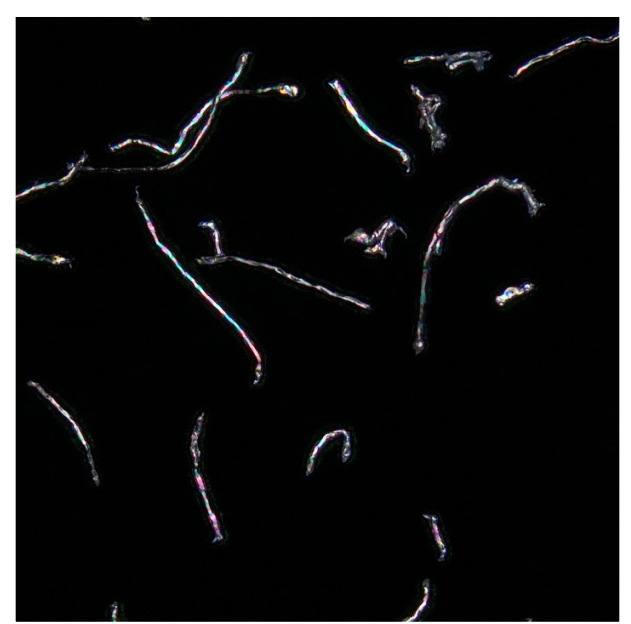


# How does flocculation of microplastics with sediment influence their settling velocities?

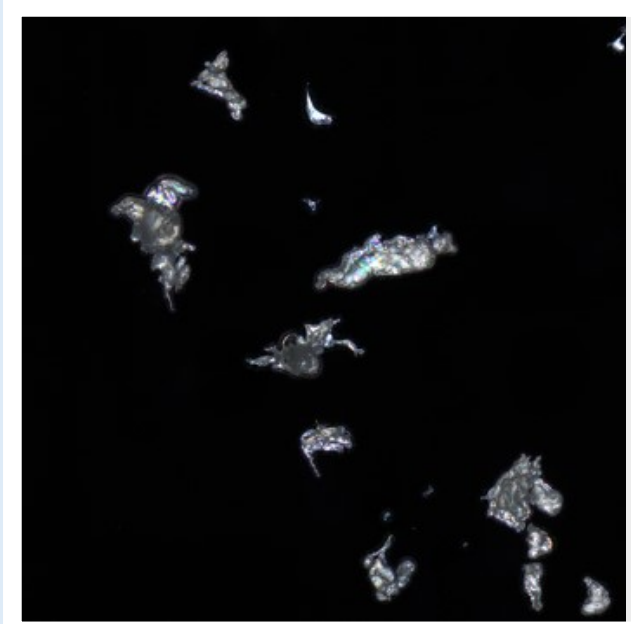
Noortje Oosterhoff, Lieke Melsen, Kryss Waldschläger

This research aims to **parameterize microplastic-sediment aggregation** for different types of microplastics and environmental conditions.

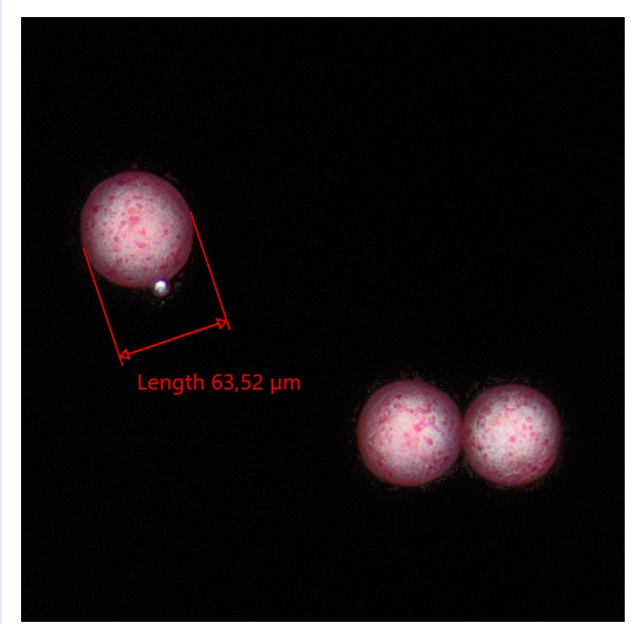
Fibers, fragments and spheres of different materials and sizes



Fibers



Fragments



Spheres

Systematically varying environmental conditions



**Salinity** affects the electrical charge on particle surfaces, increasing their tendency to aggregate.

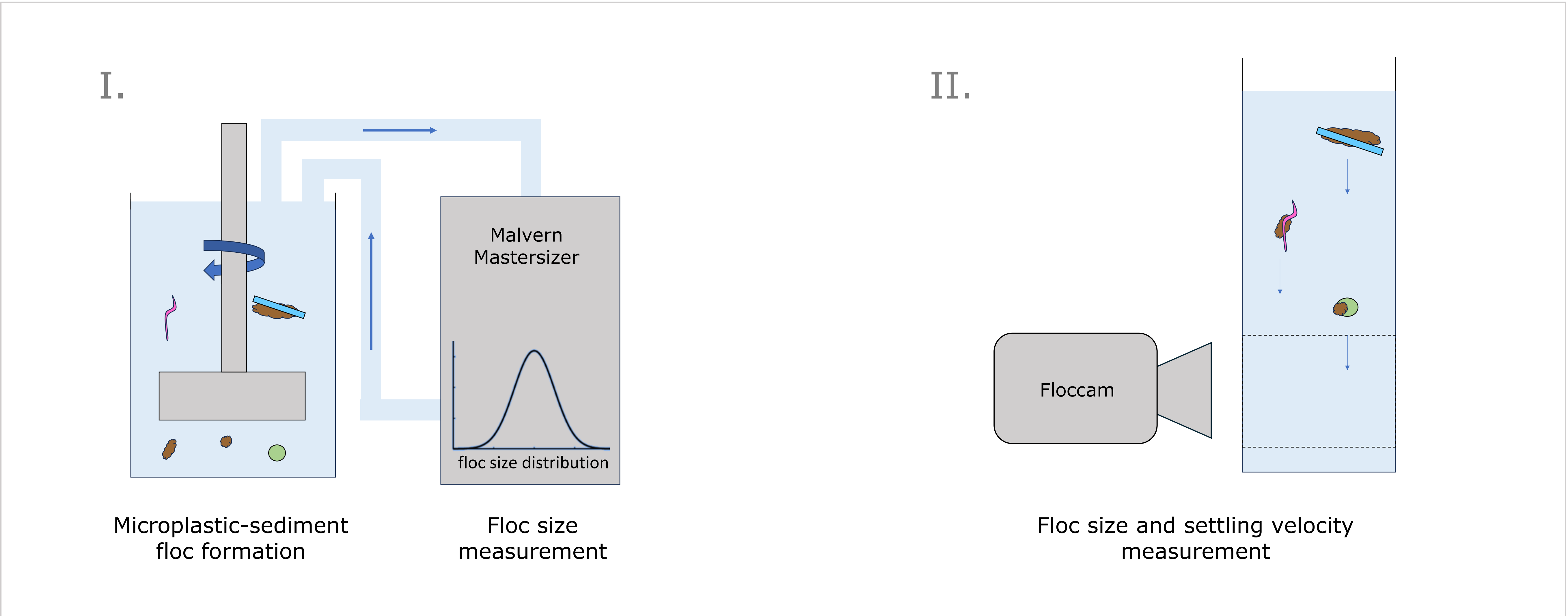


**Shear rate** impacts the formation and breakup of flocs.



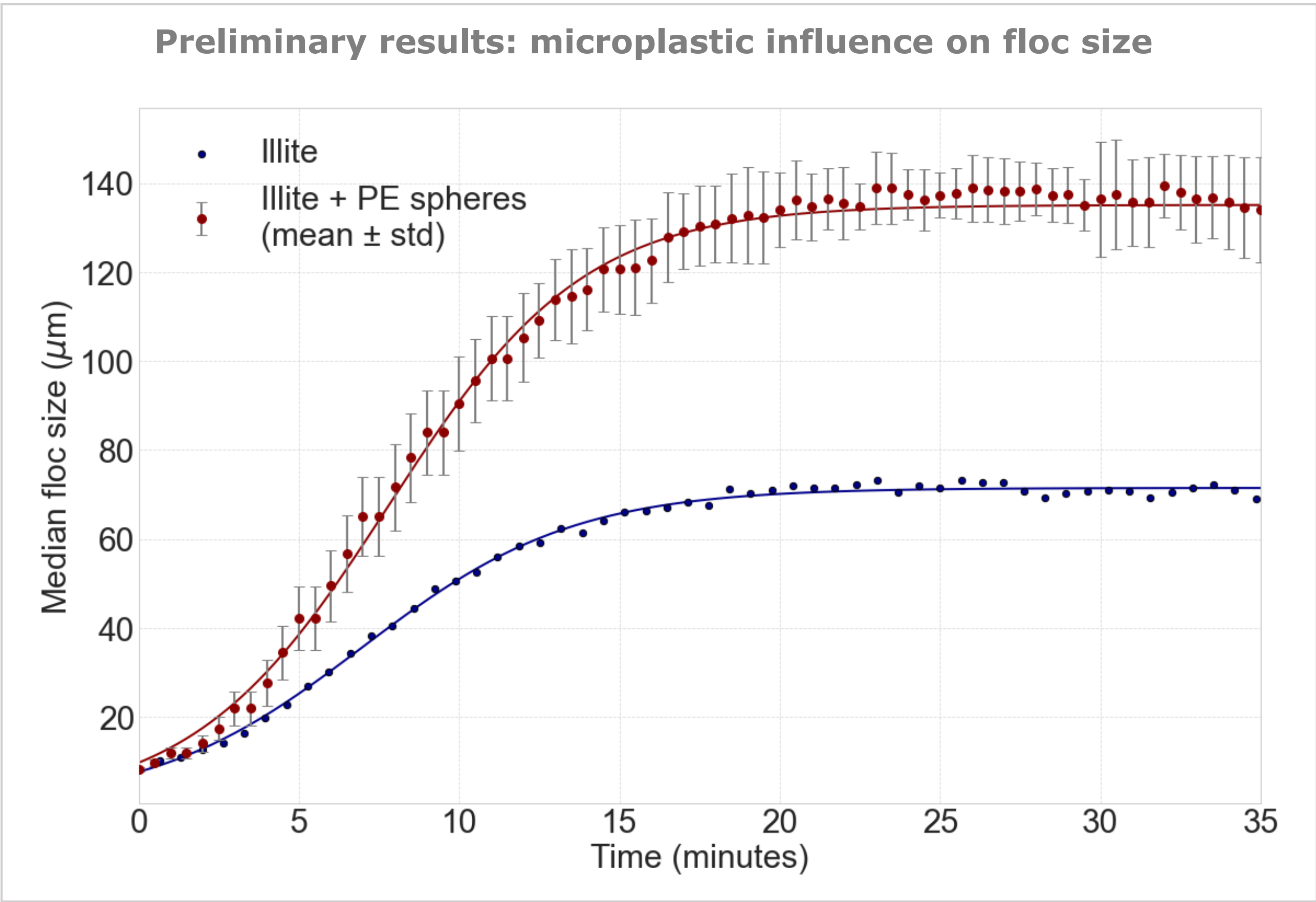
**Suspended sediment** affects the availability of particles for aggregation; an increased sediment concentration enhances microplastic-sediment aggregation.

## Experimental setup



**Microplastics contribute the formation of larger flocs.** These larger microplastic-sediment flocs are more likely to settle, thereby influencing the transport and fate of microplastic and sediment<sup>1,2</sup>.

**Hypothesis:** Incorporation into sediment flocs increases the settling of both microplastics and sediment, as the formation of larger flocs enhances settling velocity.



1. Quik, J. T. (2014). Water research, 62.  
2. Laursen, S. N. (2023). Science of the Total Environment, 886.

