

# Occurrence and fate of microplastics in aquatic systems

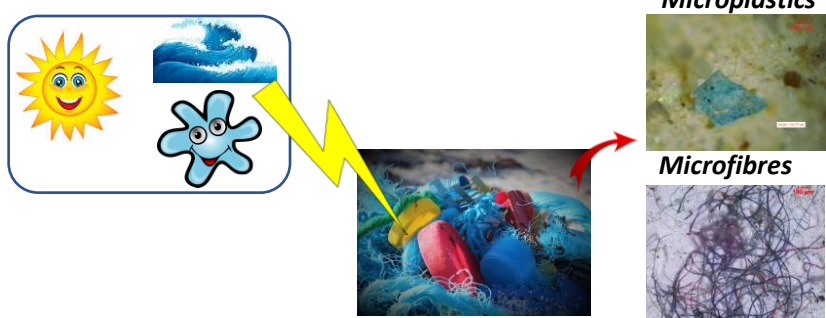
## Current problem



Overconsumption & improper disposal of plastic waste



## Weathering actions



## After-effects



## Objectives

- To investigate microplastic distribution in the catchment zone of Pallikaranai marshland, a Ramsar site in Chennai, India.

### ENVIRONMENTAL MONITORING STUDIES

- To explore microplastic removal efficiency of water/wastewater treatment plants.
- To investigate the fate of microplastics when subjected to photo-radiation.

Sampling in the catchment zone of Pallikaranai marsh



Wet-peroxide oxidation



Density separation using  $ZnCl_2$



Photo-reactor



## Long-term impacts

- Augment the scarcely available data on the distribution of microplastics in important water bodies of Chennai, India
- Monitoring ultimately helps government bodies at all levels – to undertake necessary preventive actions
- Preventive actions in-turn has direct influence on the economy and wellbeing of the society



Research by: Angel Jessieleena A, PhD student  
ce20d034@smail.iitm.ac.in

## Publications:

- Jessieleena, A., Rathinavelu, S., Eswari Velmaiel, K., John, A.A., Nambi, I.M., 2023. Residential houses — a major point source of microplastic pollution : insights on the various sources , their transport , transformation , and toxicity behaviour. Environ. Sci. Pollut. Res. <https://doi.org/10.1007/s11356-023-26918-1> (IF: 5.8)
- Jessieleena, A.A., Nambi, I.M., 2023. Distribution of microplastics in the catchment region of Pallikaranai marshland, a Ramsar site in Chennai, India. Environmental Pollution 318, 120890. <https://doi.org/10.1016/j.envpol.2022.120890> (IF: 8.90)