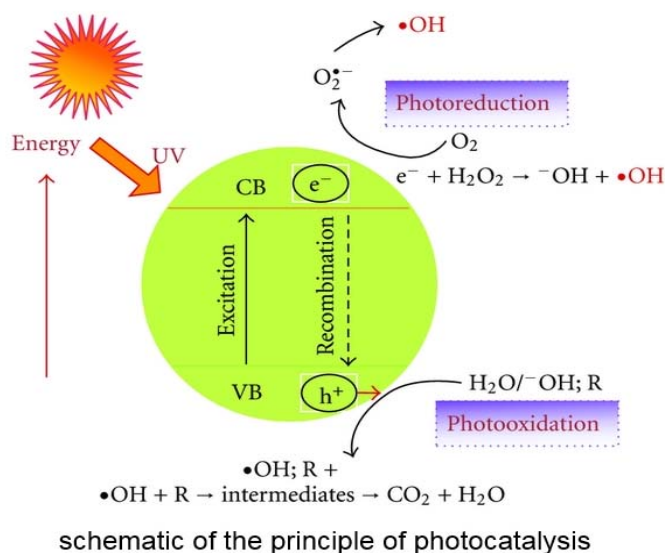
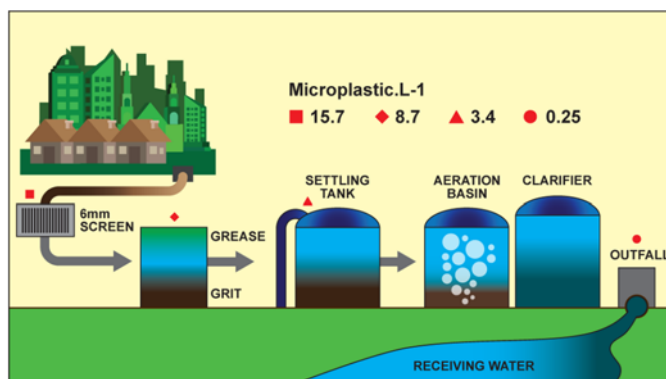


## Photocatalytic Degradation of Microplastics with Sunlight

Microplastic contamination of aquatic environments has become an increasingly alarming problem. Particles <5 mm, have reached high concentration (e.g., 100 000 particles/m<sup>3</sup>) in waters. Recent reports show that the increasing presence of microplastics in the environment could have significant deleterious consequences over the health of marine organisms, but also across the food chain. Microplastics are being detected in freshwaters of Europe and other parts of the world. Microplastics have even been detected in most of bottled water across the globe! Large amounts of microplastics are discharged from wastewater treatment plants. The plants were designed to remove organic matter, not microplastics.



There is an urgent need to develop new materials and process for the removal of microplastics from water. This project will extend our ongoing European project on design, characterization and construction of a device based photocatalytic materials to degrade microplastics in water using sunlight. The parameters to be studied could be particle size, concentration, etc. The student will characterize the degraded microplastics and evaluate the performance of the photocatalytic materials. The major analytical equipment's to be used are Fourier-transform infrared spectroscopy (FTIR), UV/Vis Spectroscopy and Optical microscope.

**Contact:** Joydeep Dutta ([Joydeep@kth.se](mailto:Joydeep@kth.se)) and Abdusalam Uheida ([salam@kth.se](mailto:salam@kth.se)), Functional Materials (FNM), Department of Applied Physics, KTH.