



## Novel Hydrogel to Remove Microplastics

**Source:** [TH](#)

Indian Institute of Science (IISc) researchers have designed a **sustainable hydrogel to remove microplastics** from water, addressing their threat to human health and the environment.

- The hydrogel has a **three-layer polymer structure** and utilises nanoclusters of a material called **copper substitute polyoxometalate (Cu-POM)** as catalysts to **degrade microplastics using UV light irradiation**.
- The hydrogel was highly efficient, removing about 95% and 93% of two different types of microplastics in water at near-neutral pH (~6.5).
- A fluorescent dye is added to the microplastics to track adsorption and degradation by the hydrogel under different conditions.
  - The material was found to be stable under various temperatures, making it a promising solution for microplastic removal.
- Microplastics are defined as **plastics less than five millimetres in diameter**, they are created through the influence of natural factors like UV radiation, wind, and currents, breaking down larger plastics into small particles.
  - There are two categories: **primary microplastics**, which are tiny particles designed for commercial use, and microfibers shed from clothing and other textiles and **secondary microplastics**, formed from the breakdown of larger plastics such as water bottles.

**Read more:** [Microplastics](#)

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