

New water purification system can filter out microplastics

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In news– Scientists from South Korea have developed a new water purification system that can quickly and efficiently filter out microplastics.

Key highlights-

- The technology is unrivaled with the **world's highest purification efficiency, removing more than 99.9 per cent of phenolic microplastics and volatile organic compound (VOC)** contaminants in water at ultra-high speeds.
- **The porous material, described** by researchers may be **used as a high-efficiency adsorption material** in the future as it has cost competitiveness based on raw materials and **enables solar-based water purification process.**
- The researchers noted that **carbon-based porous materials using existing adsorption mechanisms have limitations** in that the **adsorption rate is slow** and high thermal energy is required for recycling.
- Various materials have been developed to improve contaminant removal efficiency, but it has been difficult to develop materials that simultaneously satisfy excellent recyclability, high efficiency, economic efficiency of raw materials, and industrialisation potential.
- **The team synthesised a porous polymer with excellent adsorption performance** and photothermal properties by reacting an inexpensive and effective precursor.
- The new **technology enables a material with fast adsorption of micro-pollutants in the aquatic environment.**
- The team **produced a water treatment membrane capable of**

evaporating water using solar energy as a driving force through the developed polymer's ability to absorb light broadly and convert the absorbed light into heat.

- The **water treatment membrane coated with the oxidised polymer was confirmed to purify phenolic contaminants through sunlight.**