

IIT-I develops process to produce green hydrogen gas from PET waste in water

Indore: Indian Institute of Technology Indore on Thursday claimed developed a process to produce green hydrogen gas, in large scale, from PET waste in water, an official release said.

The research also addresses the global issue of the recycling of PET based plastic waste by transforming 'waste to wealth'. The developed process will provide a simple yet effective way to transform PET waste to produce Green Hydrogen along with the formation of primary constituents of

PET, which can further be used for the production of PET, the release said.

This method is very much in line with efforts of India towards green hydrogen production, under the

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National Hydrogen Mission and the global Sustainable Development Goals (SDG 7: Affordable and Clean Energy, and SDG 13: Climate Action).

Through this process,

the team succeeded in producing purified H₂ gas (Green Hydrogen) with an effective process for the recycling of PET waste at a moderately lower temperature (160 °C), the release said.

It is estimated that 33 kg of PET can generate 1 kg of hydrogen gas, which can run a hydrogen fuel cell car for 100 km. The team has been working on this project for the last 03 years, and currently several projects on hydrogen production are under progress in their research group, it said.

This work is done by the catalysis research team comprises of Ankit, Mahendra, Nirupama, and Tushar under the supervision of Prof. Sanjay K. Singh, Department of Chemistry, IIT Indore. The research work is recently published in ChemCatChem, and the group has also got an Indian Patent granted for this process. Now, the group is working to lower down the production cost and exploring the possibility to scale-up this process in collaboration with suitable industries, the release said. TNN