

# IIT Indore develops process to produce Green Hydrogen from PET plastic waste

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Indian Institute of Technology Indore has developed a process to produce green hydrogen gas, in large scale, from PET waste in water. 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," a press release issued by IIT Indore said.

"This method is very much in line with efforts of India towards green hydrogen production, under the National Hydrogen Mission and the global Sustainable Development Goals (SDG 7: Affordable and Clean Energy, and SDG 13: Climate Action)," the release added.

"Through this process, the team



THE RESEARCH TEAM

succeeded in producing purified H<sub>2</sub> gas (Green Hydrogen) with an effective process for the recycling of PET waste at a moderately lower temperature (160 °C). 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," the release went on to add.

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 Chem-CatChem, 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.