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### Photocatalytic reactors for H<sub>2</sub> recovery from H<sub>2</sub>O and H<sub>2</sub>S splitting

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Hydrogen is a clean fuel and an efficient energy carrier. Photocatalytic hydrogen production from cheap raw materials like water and industrial waste hydrogen sulfide provides an economical, environmentally friendly solution for future. To ensure efficient conversion of incident solar light photons to charge carriers, appropriate design of a solar photocatalytic reactor is most important. This review focuses on various configurations of photocatalytic reactors used for hydrogen recovery from both water and hydrogen sulfide (both liquid and gas-phase). From the literature review, it was observed that the rate of reaction was much influenced by the reactor configuration adopted. Based on the observations, very few studies were focused for development of solar photo-reactor for the generation of H<sub>2</sub>. Hence the effective solar photocatalytic generation of H<sub>2</sub> from H<sub>2</sub>S by developing a suitable photo-reactor is essential for large-scale hydrogen recovery.

#### Biography

V Preethi is an Associate Professor in Hindustan University, Chennai, India. She received her Ph.D. degree in Environmental Engineering from the Anna University, Chennai. She completed her MS in Environmental Technology from Autonomous University of Barcelona (UAB), Spain. She is the author for 7 publications in peer-reviewed journals with high impact and more than 25 oral communications in international conferences and symposium. She is also the author of 2 patents. In 2015 she was awarded the Young Scientist Award for Hydrogen Energy and Advanced Materials (HEAM) by National Institute of Technology, Bhopal and Indian Association of Hydrogen Energy and Advanced Materials. Apart from that she also received 4 other awards for her innovative research findings. She has worked as a researcher for two years in Indian Institute of Technology, Madras, UAB, Spain. Also she has five years of teaching experience and totally 11 years of experience in both research and academics. She organized and conducted an International Conference on Sustainable Environment and Energy (ICSEE 2017) funded by DST, Government of India. She is the principal Investigator for a project titled 'Recovery of Hydrogen from Industrial Waste Streams' funded by DST, Government of India.

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