



Dr. V. Preethi

Professor & Head, Department of Civil Engineering
Hindustan Institute of Technology and Science (HITS)
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Total Experience in Years: 14

Research areas: Recovery of hydrogen from industrial wastewater, Biogas production from solid waste, Biofuel production using algae, CO₂ adsorption using amine reactor, Pollutant degradation using biofilters and photocatalytic process

Educational Qualifications:

- 2010-2015:** **Ph.D. in Environmental Engineering (Thesis Highly Commended)**, Anna University, TN, INDIA. *Thesis title:* Recovery of Hydrogen from Hydrogen Sulphide using Liquid-phase and Gas-phase Photocatalytic Processes.
- 2004-2006:** **M.S. Environmental Technology (with First class)**, Autonomous University of Barcelona, Barcelona, SPAIN.
- 2000-2004:** **B.E. Environmental Engineering (with First class)**, Avinashiligam Deemed University, Coimbatore, TN, INDIA.

Completed Research Project:

S.No.	Title of the Project	Period of the Project	Funding Agency and Project Cost	Status
1.	Recovery of Hydrogen from Industrial Waste Streams	3 years (Mar 2016 to Mar 2019)	DST-SERB, India; Rs. 10,50,500	Completed

Recent publications:

- Sankar S, **Preethi V**, Saravanan S, Deuk YK, Sejoon L, Excellent photocatalytic performances of Co₃O₄-AC nanocomposites for H₂ production via wastewater splitting, Chemosphere, 2022, 286, 131823.
- V. Navakoteswara Rao, **Preethi Vijayarengan**, Urupalli Bhargav, Shankar Muthukonda Venkatakrishnan, Gram-scale synthesis of ZnS/NiO core-shell hierarchical nanostructures and their enhanced H₂ production in crude glycerol and sulfide wastewater, 2021, Environmental Research, 10.1016/j.envres.2021.111323.
- S Chandrapp, D.H.K. Murthy, Lakshmana Reddy N, S. Jagadeesh Babu, Dinesh Rangappa, Bhargav U, **V. Preethi**, Mamatha Kumari, Shankar MV; Utilizing 2D Materials to Enhance H₂ Generation Efficiency via Photoreforming Industrial and Solid Waste, Environmental Research, 2021, 111239.
- M. Jothilingam and V. Preethi, Feasibility, compressive strength and utilization of redmud in geopolymer concrete for sustainable constructions, Available online 16 March 2021. <https://doi.org/10.1016/j.matpr.2021.01.535>.
- Raja, M.A., Preethi, V., Pal, Y., Nalajala, N., Gopinath, C.S., Photocatalytic Hydrogen Production from H₂S using Nanostructured CNT blended CdZnS/Fe₂O₃ Thin Film on Glass Substrate, Journal of Physics: Conference Series 2020.
- Sankar Sekar**, **Sejoon Lee**, **Preethi Vijayarengan***, Kalirajan KM, Santhakumar T, Saravanan Sekar, Sudha S, Upcycling of Wastewater via Effective Photocatalytic Hydrogen Production Using MnO₂ Nanoparticles-Decorated Activated Carbon Nanoflakes, Nanomaterials 10, 2020, 1610.
- Sankar Sekar**, **Sejoon Lee**, **Preethi Vijayarengan***, Biomass Activated Carbon-Decorated Spherical β-Ni(OH)₂ Nanoparticles for Enhanced Hydrogen Production, Journal of Water Process Engineering (accepted for publication), Sep 2020.
- Hariram Venkatesan, Godwin John John Rose, **Preethi Vijayarengan**, Seralathan Sivamani, Jagannathan Krishnan, Micha Premkumar T, Predicting the combustion behaviour of compression ignition engine fuelled with biodiesel from *Stoechospermum marginatum*, a macro algae, Environmental Science and Pollution Research, DOI:10.1007/s11356-020-10048-z, July 2020.
- V. T. Neelmudiyon, **Preethi Vijayarengan**, S. Govindarajan, A Study on Conjunctive use of Green and Blue Water in Deevanur Tank Irrigated Area, International journal of advanced research in engineering & technology 11(9):272-281, 2020.
- V. Navakoteswara Rao, N. Lakshmana Reddy, M. Mamatha Kumari, P. Ravi, M. Sathish, K.M. Kuruvilla, **V. Preethi***, K. Raghava Reddy, T.M. Aminabhavi*, M.V. Shankar*, Photocatalytic H₂ production coupled with

- pollutant removal from sulphide wastewater: Surface and interface control of photo-excitons in Cu₂S@TiO₂ core-shell nanostructures, *Applied Catalysis B Environmental* 254, (2019) 174-185.
11. S.N.Mohamed*, **Preethi V*** and Matheswaran M, Enhancing biohydrogen production from sugar industry wastewater using metal oxide/graphene nanocomposite catalysts in microbial electrolysis cell, *International Journal of Hydrogen Energy*, 45 (2020) 7647-7655.
 12. **Preethi V***, Anthony Raja, Performance of Square and Trapezoidal Photoreactors for Solar Hydrogen Recovery from Various Industrial Sulphide Wastewater using CNT & Ce³⁺ doped TiO₂, *International Journal of Hydrogen Energy*, 45 (2020) 7616-7626.
 13. M. Anthony Raja and **V. Preethi*** Photocatalytic Hydrogen Production using Bench-scale Trapezoidal Photocatalytic Reactor under Visible and Solar Irradiation, *International Journal of Hydrogen Energy*, 45 (2020) 7574-7583.
 14. A.Madhumitha, **V.Preethi*** and S.Kanmani, Photocatalytic Hydrogen Production using TiO₂ Coated Iron-Oxide Core Shell Particles, *International Journal of Hydrogen Energy*, 43 (2018) 3946-3956.
 15. Bharatvaj J, **Preethi V*** and Kanmani S, Hydrogen Production from Sulphide Wastewater using Ce³⁺-TiO₂ Photocatalysis, *International Journal of Hydrogen Energy*, 43 (2018) 3935-3945.
 16. **V. Preethi*** and Kanmani S, Performance of Nano Photocatalysts for the Recovery of Hydrogen and Sulphur from Sulphide Containing Wastewater, *International Journal of Hydrogen Energy*, 43 (2018) 3920-3934.
 17. **V. Preethi*** and Kanmani S, Optimization of operating parameters for gasphase Photocatalytic splitting of H₂S by novel vermiculate packed tubular reactor, *Journal of Environmental Management*, 181, 674-680, 2016
 18. **V. Preethi*** & Kanmani S, Performance of gasphase reactors on hydrogen recovery from industrial waste gases, *Int. J Hyd. Energy* 42 (2017) 8997-9002
 19. **V. Preethi*** and S. Kanmani, Performance of four various shapes of photocatalytic reactors with respect to hydrogen and sulphur recovery from sulphide containing waste streams, *Journal of Cleaner Production*, 133 (2016) 1218-1226.
 20. **V. Preethi*** and S. Kanmani, Photocatalytic hydrogen recovery using Fe₂O₃ core shell nano particles, *International J Hydrogen Energy* 39 (2014) 1613-1622.
 21. **V. Preethi*** and S. Kanmani, Photocatalytic Hydrogen Production, *Material Science in Semiconductor Processing*, 16 (2013) 561-575.
 22. **V. Preethi*** and S. Kanmani, Photocatalytic hydrogen production over CuGa_{2-x}Fe_xO₄ Spinel, *International Journal of Hydrogen Energy*, 37 (2012) 18740-18746.
 23. Preethi, , M. Mamatha Kumari, N. Ramesh Reddy, U. Bhargav, K.K.Cheralathan, C.H.Shilpa Chakra and M.V.Shankar, Chapter 2: Recent Progress in Photocatalytic Water Splitting by Nanostructured TiO₂-Carbon Photocatalysts – Influence of Interfaces, Morphological Structures and Experimental Parameters, *Integrating Green Chemistry and Sustainable Engineering*, Wiley Online library, 27 March 2019, <https://doi.org/10.1002/9781119509868.ch2>
 24. S.Saravanan, B.Stalin, M.Ravichandran, S.Sankar, **V.Preethi**, *Fundamentals of Nanoscience*, Arunai Publications Private Limited, Revised Edition 17th, July 2019, ISSN 978-81-938294-0-0.

Awards and Honours:

1. Received FIRST PRIZE for a oral presentation entitled “Overview of Nano materials for hydrogen production” in the National conference “Nano Technology: Applications and its advantages in natural sciences”, held on 4th-5th February 2010 at Manonmanium Sundaranar University, Thirunelveli.
2. Received the NCHEAM SCIENTIST OF THE YEAR AWARD on the occasion of ‘4th National Convection on Hydrogen Energy and Advanced Materials (NCHEAM’15)’ organized by Energy Centre, MANIT, in association with University of Kerala & IAHEAM from 28-29th November, 2015.
3. Received a SPECIAL AWARD from Hindustan Institute of Technology and Science on 24th January 2016, for getting a DST funded research project 'Recovery of Hydrogen from Industrial Waste Streams'.
4. Received a Research Award for being active in research work, from Hindustan Institute of Technology and Science on 3rd May 2016 during the annual day 2015-16
5. Received Hindustan Innovative Awards 2017 for the innovative research on CO₂ Sequestration’
6. Received Award Young Faculty in Environmental Engineering 2017 by Venus International Foundation.
7. Received fund of Rs.2,00,000/- from DST-SERB, Government of India for conducting an International conference Sustainable Environment and Energy (ICSEE 2017).
8. Received Travel Grant from SERB to participate in an International Conference ‘Pollution Control 2017’ held in Melbourne during July 2017.
9. Received fund of \$2500 from International Association of Hydrogen Energy, USA to present a paper in World Hydrogen Energy Congress 2018, Rio de Janeiro, Brazil during 17-22, June 2018.
10. Received fund of Rs.2,00,000/- from DST-SERB, Government of India for conducting the second International conference Sustainable Environment and Energy (ICSEE 2019).
11. Received grant as visiting researcher from Universiti de La Laguna, Canary Islands, Spain for the year 2022.

Guest Lecture Delivered:

1. Delivered a Guest Lecture on 'Advances in Composting Processes' in FDP on Solid Waste Management organized at Civil Department, Hindustan University, Chennai from 22nd to 23rd July 2016.
2. Delivered an Invited Talk on 'Liquid and Gas-phase Hydrogen Production from Industrial Sulphide Waste' at Melbourne University, Australia during 25th July 2017
3. Delivered an Invited Talk on 'Outdoor Solar Studies on Photocatalytic Hydrogen Production' at Deakin University, Australia – 26.07.2017.
4. Delivered an Invited Talk on 'Effect on Sulphide on Environment and its Treatment Methods' at University Federal de Juiz de Fora, Brazil – 20.06.18
5. Delivered an Invited Talk on 'Nanomaterials for Hydrogen Production' in an International Conference on Applied Nanoscience and Nanotechnology (ICANN-2019), organized by Nanoscience and Technology, Alagappa University, Karaikudi, Tamilnadu, India- 22.02.19.
6. Delivered Keynote Speech on 'Solar Hydrogen Production and selection of nano materials' in an International Conference on Sustainable Environment and Social Management (ICESM 2019), 12-13, Nov., 2019 – Organized by UMP Consultancy, Malaysia.
7. Delivered Keynote Speech on 'Solar Assisted Energy Production from Industrial Wastewater' in an International Conference on RACEEE 2020, - organized by SSN College, 13-14, February 2020, Chennai
8. Delivered an online Invited Talk on Recovery of Energy from Waste to the Department of Chemical Engineering, Universiti Malaysia Pahang, Malaysia on 22.05.2020.
9. Delivered an online keynote speech on 'Mitigation strategies of hydrogen sulphide emission', AICTE sponsored STTP, Disaster mitigation organized by Crescent Institute of Science & Technology on 17.11.2020.
10. Delivered an online keynote speech on 'Photocatalytic hydrogen production', virtual national workshop on Advanced materials for energy and environment applications (AMEEA2020) - 22.12.2020 organized by Yogi Vemana University, Kudapa, AP..
11. Delivered an invited talk on Climate change effects on agriculture, World Technological University Congress UK 18th – 21st, October 2021

Conference Organized:

1. International Conference Organized and Conducted – International Conference on Sustainable Environment and Energy (ICSEE 2017) held at HITS, Chennai during 6th & 7th, April 2017.
2. Convener for Second International Conference on Sustainable Environment and Energy (ICSEE 2019), held at HITS, Chennai during 21st -22nd, February 2019.
3. Convener for third International Conference on Sustainable Environment Energy and Construction (ICSEEC2021) HITS Chennai during 16th and 17th, December 2021.

Research Gate: https://www.researchgate.net/profile/Preethi_Vijayarengan

LinkedIn: <https://www.linkedin.com/in/preethi-v-30264353/>

Google Scholar: <https://scholar.google.com/citations?user=sHrdgC0AAAJ&hl=en&authuser=1>