


Biohydrogen production from biogenic waste (solid /liquid)

<p>Title of Product/Process/Design/Equipment</p>	<p>Biohydrogen production from biogenic waste (solid /liquid)</p>
<p>IPR Status Patent/Copyright/Trade mark Secured in India/Abroad IPR Details</p>	<p>To be patented</p>
<p>Application/Uses</p>	<p>Technology is intended to produce Biohydrogen from waste/wastewater through acidogenic fermentation apart from its remediation</p> <p>Biohydrogen can be used as</p> <ul style="list-style-type: none"> Energy carrier for automobile sector Raw material and process ingredients in various industries viz., chemical, pharmaceutical, petroleum, fertilizer, food, etc. Supplemented as additive in CNG to increase the efficiency <p>Integrated process produce</p> <ul style="list-style-type: none"> Biomethane and Biohythane Platform chemicals (acetic acid, propionic acid, butyric acid, etc.) or as feedstock for secondary biobased product production
<p>Salient Technical Features including Competing Features</p>	<ul style="list-style-type: none"> Generates 50,000 liters of biohydrogen along with 60% of COD removal efficiency with operation loading rate of 50 g COD/L Designed to apply for any kind of waste/wastewater with higher organic load (COD > 5 g/l; BOD/COD > 0.35) as feedstock Can be designed with 10 m³/day to 100 m³/day of operation Captive and Merchant Applications Standalone process for biohydrogen production or as an unit operation in ETPs Can be embedded with existing ETPs in industry for captive production Focal technology for production of Biobased products from waste Simultaneous remediation with resource recovery Sustainable and renewable technology Supports circular bioeconomy and can efficiently embedded with waste biorefinery platform

	Ideal for SMES, MMES, Ventura Capitals, etc.
Level/Scale of Development	Pilot scale (10 m ³): TRL 7
Environmental Considerations	Technology aligns with the Swachh Bharat Abhiyan and sustainable developmental goals (SDG).
Status of Commercialization	
Major Raw Materials to be Utilized	Industrial Wastewater (BOD/COD > 0.35 with COD > 5 g/l) Solid waste viz., food/vegetable waste, organic fraction of municipal waste, sludge, biomass, etc.
Major Plant Equipment and Machinery Required	Acidogenic bioreactor, Biogas holding tanks, buffering tank, gas flow meters, inoculum tank, biogas flare, redox control tank, feed/water storage tank, pumps, air compressor, safety valves, control panel, sensors , etc.
Techno-Economics	Competitive technology is not available in the market
Photograph	 <p>Biohydrogen Pilot plant (10 m³)</p> <p>Various Unit operations in Biohydrogen</p> <ul style="list-style-type: none"> •Biogenic Municipal Waste •Food Waste •Vegetable Waste •Industrial wastewater •Sludge •Agro-biomass <p>P & I Diagram of Pilot plant (10 m³)</p>

For further information please contact

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