

## Customized effluent treatment plant (ETPs) for chemical and pharmaceutical wastewater

Title of Product/Design/Equipment	Customized effluent treatment plant (ETPs) for chemical and pharmaceutical wastewater
IPR Status Patent/Copyright/Trademark Secured in India/Abroad IPR Details	--
Application/Uses	<p>Used for the treatment of different types of low to high biodegradable wastewater.</p> <p>New pharmaceutical and chemical based industries</p> <p>Industrial clusters with chemical based process</p> <p>Trouble shooting with existing ETPs</p>
Salient Technical Features including Competing Features	<p>Combines all the treatment steps in a customized and defined sequence of operation</p> <p>Ideally suits for chemical and pharmaceutical industry.</p> <p>Customized design to embed with multiple micro-environments based on waste characteristics</p> <p>Possibility to switch operation with oxidation and reduction.</p> <p>Treats different kinds of wastewater (low and high biodegradable wastewater)</p> <p>Requires less retention time</p> <p>Low energy input</p> <p>Cost effective and easy to operate</p> <p>Modular design (if required)</p> <p>Can be upgraded in the existing ETPs also</p>
Technology Readiness Level (TRL) on 1-9 (Level/Scale of Development)	<p>TRL=7</p> <p>Demonstrated for many industries based on the waste characteristics from full to pilot scale.</p>
Implementation Status and scale of implementation	Full scale (design varied based on the effluent quality and quantity)
Status of Commercialization	--
Major Raw Materials to be Utilized	Both low and high biodegradable chemical based wastewater

Major Plant Equipment and Machinery Required	Tanks, aeration system diffused air, pumps, piping, etc.
Techno-Economics and Competitiveness	Depends on the quality and quantity of effluent in line with regulatory requirements
Technology Package	Lab scale evaluation to customized full scale ETP
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