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Pondy univ's waste water treatment tech out in the market



Bosco.Dominique@timesgroup.com

A low-cost eco-friendly self-propagating waste water treatment technology developed by researchers of Pondicherry University will soon hit the commercial market.

A brainchild of former professor S A Abbasi in 2018, the technology christened 'Shefrol' (sheet-flow root-level reactor) was patented by the university. The university has granted non-exclusive rights to a Mumbai-based firm, Vision Earth Care, to commercialise the wastewater treatment technology for five years.

The cost to set up a unit to treat wastewater of a few houses is a little more than ₹30,000 said Abbasi. "The unique feature of the technology is that it is six times less expensive than the next cheapest conventional technology, yet it is effective and efficient. It runs on solar energy and requires very little material inputs and maintenance," he said.

The system has a reactor, which includes channels in which short-statured terrestrial, amphibious or aquatic weeds are packed to the capacity. "Wastewater is made to flow through the channels at a depth adequate to cover the plant roots that remove numerous pollutants in a single step. One of the biggest advantages is that the technology helps to remove pollutants in a single step in contrast to conventional technologies that need several units besides pumps, mixers, aerators or settlers. This reduces the cost," said Abbasi.

The researchers have identified a suit of 20 weeds that are easily and freely available throughout the country. The technology can use one or more weeds to treat wastewater. "Another advantage is the weeds after stacking, grow and reproduce as they treat waste water. This makes the system self-propagating as no fertilization is involved. Hence the system has negligible maintenance cost or depreciation," he said.

WHAT'S THE TECHNOLOGY?

- Six times less expensive than the next cheapest conventional technology
- It is self-propagating, running on clean solar energy, requiring very little material inputs and maintenance
- Involves a reactor comprising channels in which short-statured terrestrial, amphibious or aquatic weeds are packed to capacity
- Wastewater is made to flow through the channels at a depth adequate to cover the plant roots
- The design enables removal of numerous pollutants in a single step in contrast to conventional technologies that need several different units in series besides pumps, mixers, aerators or settlers
- Weeds grow and reproduce as they treat wastewater making the system self-propagating as stirring or fertilization or aeration is not involved

Abbasi said the Centre's department of science and technology, department of biotechnology and the centre for development of advanced computing had independently conducted background checks and certified the technology 'novel and patentable'.

Several pilot plants were set up within the university campus and at the villages in Puducherry. "At present, plants based on this technology are being commissioned in Fareedpur and in Hariyawan near Hardoi, Uttar Pradesh, under MGNREGA under the corporate social responsibility initiative of DCM Shriram," said Abbasi.

Vice-chancellor Gurmeet Singh said, "The commercialisation of Shefrol technology will pave the way for similar public use of several other pollution control systems that have been developed and patented by researchers in the university."

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