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IIT-Bombay provides fast solution to oxygen crisis

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Institute ready to help pan-India adoption of the solution



The Indian Institute of Technology (IIT) Bombay has come up with a creative and ingenious solution to addressing the shortage of medical oxygen for the treatment of COVID-19 patients in the country.

The pilot project which has been tested successfully relies on a simple technological hack- conversion of PSA (Pressure Swing Adsorption) Nitrogen Unit to PSA Oxygen Unit.

Initial tests done at IIT Bombay have shown promising results. Oxygen production could be achieved at 3.5 atm pressure, with a purity level of 93% - 96%. This gaseous oxygen can be utilised for COVID-related needs across existing hospitals and upcoming COVID-19 specific facilities by providing a continuous supply of oxygen.

The pilot project is a collaborative effort between IIT Bombay, Tata Consulting Engineers and Spantech Engineers, Mumbai, who deal with PSA Nitrogen & Oxygen plant production.

A PSA Nitrogen plant in the Refrigeration and Cryogenics Laboratory of IIT was identified for conversion, to validate the proof of concept. To undertake this study on an urgent basis, an MoU was signed between IIT Bombay, Tata Consulting Engineers and Spantech Engineers to finalise an SOP that may be leveraged across the country.

Spantech Engineers installed the required plant components as a skid at IIT Bombay for evaluation using IIT Bombay’s infrastructure at the IITB Nitrogen facility at the Refrigeration and Cryogenics lab. This setup for the experiment was developed within three days, and the initial tests have shown promising results.