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IIT Bhubaneswar develops portable, low cost ventilator

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BHUBANESWAR: IIT
Bhubaneswar has developed a portable and low-cost ventilator for the use of Covid-19 patients. The institution began developing the product around three weeks ago after the shortage of ventilators in the country became evident through news reports and doctors' testimonials.


The portable ventilator developed by the IIT costs around Rs 8,000 apiece. The institute has created a prototype of the device and has tested it successfully. "We will apply for approval from the Indian Council of Medical Research (ICMR) before starting mass production," said IIT Bhubaneswar director R V Rajakumar.

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The ventilator has been developed by the school of mechanical sciences of the institute. It was conceived and manufactured (in-house) by associate professor, Manas Mohan Mahapatra, and team comprising JG Thakare, Arabinda Meher, Bivudatta Mohanty and Umesh Melkani.

Mohapatra said the ventilator would be connected with oxygen supply and its pumping rate can be adjusted according to need. This pumping is done by using a programmable stepper motor drive. The speed and stroke length of the stepper motor can be both controlled manually and through a programme, he added.

The teacher said a doctor would take a decision on the breathing frequency of the patient and the frequency could be set in the ventilator by paramedics. "The device operates smoothly without noise. It is safe, reliable and easy to use," he added.

Mihir Kumar Pandit, head of the school of mechanical sciences, said the ventilator could be run on battery, if required. It is portable because of its light weight. "The weight of the ventilator is around 3kg," he said, adding that it was tested successfully in the presence of the institute's director.

Rajakumar said IIT had started different types of research to fight Covid-19. "Ventilators are needed for Covid-19 patients because they show breathing problems. If we get approval for this, we will start mass production at our start-up centre or transfer the technology to a company," he added.

While congratulating the researchers, Rajakumar said the institute would come up with more such products to fight Covid-19.

"I do not know of any other IIT having come up with such low-cost ventilators," he added.