

IIT KANPUR INCUBATED START-UP DESIGNS VENTILATOR TO COMBAT COVID-19

Government of India has invited companies engaged in defence, automobile manufacturing and medical technologies to re-purpose their assembly lines to produce masks, ventilators, coveralls and other medical devices to meet the growing demand for these products to combat COVID-19. Several start-up enterprises are also leveraging cutting edge technologies to design medical devices used in the treatment of this disease. Responding to this call, an IIT Kanpur incubated start-up Nocca Robotics, which designs robots for cleaning solar panels, has ventured into designing ventilators. In an interview to MVIRDC World Trade Center Mumbai, **Dr. Amitabha Bandyopadhyay, Professor and In-charge, IIT Kanpur Incubation Centre (Startup Incubation and Innovation Centre – SIIC)** explains how this initiative will contribute to the nation's fight against this pandemic.

Excerpts of the interview:**1. What is the role of IIT Kanpur in meeting the growing demand for ventilators in the country?**

Hospitals across India currently have around 48,000 ventilators, compared to the demand of a more than a lakh to provide life support to the ever growing number of COVID-19 patients. Nocca Robotics, which is one of the incubatees of IIT Kanpur is working on design, prototype and testing of invasive ventilators, which can be a useful life support for COVID patients. The faculty of IIT Kanpur, Indian Angel Network and experts from the medical fraternity are assisting the 4-member core group of engineers at Nocca Robotics in designing invasive ventilator.

Although there are producers of non-invasive ventilators in the country, medical experts are of the opinion that invasive ventilators are more useful in providing life support for COVID-19 patients. This is because non-invasive ventilators deliver air at high pressure into the mouth opening of a patient. The patient should be able to suck this air into his lungs. However, patients suffering from COVID-19 or Acute Respiratory Distress Syndrome (ARDS), cannot suck this air into his/her lungs. That is why medical experts suggest invasive ventilators, which delivers oxygen-enriched air directly into the lungs through an endo-tracheal tube that is fitted inside the patient's trachea.

Currently, in India, there are only a handful of manufacturers of invasive ventilators. Around 11 manufacturers have expressed interest to produce invasive ventilators based on the design and prototype being developed by Nocca Robotics. By the end of May 2020, these manufacturers have set a target to produce 30,000 ventilators.

IIT Kanpur has also produced another start-up enterprise that is developing robotic light-based disinfectant for sanitizing hospitals, wards and other premises and thereby protect health workers.

2. How do you ensure that the prototype developed by Nocca Robotics, which does not have prior experience in making ventilators, conforms to the quality standards of the industry?

As of today, ventilators do not come under the notified list of medical devices which needs to be approved by the Central Drugs Standard Control Organisation (CDSCO). Government of India is working out the minimum standards and approval process for manufacturing and supply of ventilators. We are expecting the government to release these standards in the next few days. Once these standards are released, Nocca Robotics will apply for approval of its design before sharing the design with the manufacturers.

3. Does Nocca Robotics have any timeline and target for supplying invasive ventilators in the market?

Nocca Robotics will apply for approval of the design by April 10; from then, it may take two weeks to secure approval from the government. Therefore, if everything goes as per plan, manufacturers may start production based on the approved design from the first week of May. By the end of May 2020, these 11 manufacturers or some of them, who showed interest to produce ventilators, will cumulatively produce and supply 30,000 ventilators.

4. Given the technologically advanced feature of the invasive ventilators, will it be affordable for poor patients in India?

Currently, ventilators in India cost anywhere between Rs. 2 lakhs and Rs. 25 lakhs, depending on their functionality. The ventilator that will be designed by Nocca Robotics will cost approximately Rs. 50,000. Some of these 11 companies have agreed to manufacture ventilators by using their funds earmarked for Corporate Social Responsibility (CSR). These companies will produce ventilators on a not-for-profit basis. This, if they do not load their profit margin, the final price may even be less than Rs. 50,000. We are also receiving support from government, which has committed to spend its fund under various start-up incubation schemes for developing critical medical devices to combat COVID-19.

NOTIFICATIONS

Press Information Bureau, Government of India

- [Health concerns shall precede over that of economy](#)
- [Prime Minister calls his counterpart in Sweden](#)
- [Prime Minister calls Sultan of Oman](#)
- [Facilitating farming activities during lockdown](#)
- [Ensuring smooth shipping operation amidst lockdown](#)
- [Daily Bulletin on COVID-19](#)

DGFT

- [Amendment in export policy for APIs](#)
- [One time condonation under EPCG scheme](#)
- [Electronic filing and issuance of Preferential Certificate of Origin](#)

RBI

- [Hedging of foreign exchange risk – final directions](#)

MVIRDC World Trade Center Mumbai

Center 1, 31st Floor, Cuffe Parade, Mumbai - 400005, Maharashtra, India

Call : +91-22-6638 7272

E-Mail : marketing@wtcmumbai.com

Website : www.wtcmumbai.org