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IIT ROPAR DEVELOPS FIRST-OF-ITS-KIND OXYGEN RATIONING DEVICE - AMLEX

Relevant for: Science & Technology | Topic: Indigenization of technology and developing new technology

To increase the life of medical oxygen cylinders three fold, the Indian Institute of Technology, Ropar has developed a first-of-its-kind Oxygen Rationing Device – AMLEX that supplies a required volume of oxygen to the patient during inhalation and trips when the patient exhales CO2. This process saves oxygen which otherwise unnecessarily get wasted.

So far, during exhalation, the oxygen in the oxygen cylinder/pipe is pushed out along with the exhaled CO2 by the user. This leads to wastage of a large volume of oxygen in long run. In addition to this, a large volume of oxygen escapes from the openings of the mask to the environment in the resting period (between inhalation and exhalation) due to continuous flow of life saving gas in the mask. As we have seen the demand of medical oxygen has jumped manifold amid the second wave of Covid-19, the device would help in stopping the unwanted wastage of the same.

“The device can operate on both portable power supply (battery) as well as line supply (220V-50Hz)”, said Director, IIT, Ropar, Prof. Rajeev Ahuja.

It has been developed by PhD students of Biomedical Engineering Department of the institution - Mohit Kumar, Ravinder Kumar and Amanpreet Chander under the guidance of Dr. Ashish Sahani, Assistant Professor, Department of Biomedical Engineering.

“Made specifically for oxygen cylinders, AMLEX can be easily connected between oxygen supply line and the mask worn by the patient. It uses a sensor which senses and successfully detects inhalation and exhalation of the user in any environmental condition”, said Dr Sahani. This ready to use device works with any commercially available oxygen therapy masks having multiple openings for air flow.

Appreciating the innovation, Dr GS Wander, Director, Research and Development at Dayanand Medical College, Ludhiana, said that in the present pandemic times we all have learnt the importance of effective and pertinent use of life saving Oxygen. He said though many hospitals are increasing their oxygen production capacity, a device like this can really help in limiting the use of oxygen in small rural and semi urban health centers.

Prof. Rajeev Ahuja said that the country now needs rapid but safe solutions to combat Covid-19. Since the virus is affecting the lungs and subsequently breathing system of the patient, the institution has not intended to go in for patenting of the device. He said rather the IIT would be happy to transfer this technology free of cost, in the interest of the nation, to those interested to go in for mass production of the device.

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