



Ministry of Science & Technology

Indian Chest Society describes CSIR-CMERI Oxygen Enrichment Technology as 'Made in India, Made for India'

Posted On: 27 JUN 2021 5:06PM by PIB Delhi

A Webinar on 'The Element of Hope in the COVID Era: Oxygen' was organised by the Indian Chest Society in association with CSIR-CMERI on 27th June 2021. Prof. Harish Hirani, Director, CSIR-CMERI, was the Chief Speaker for the Virtual Event. The Webinar was attended by Expert Panellists comprising of Dr. Deepak Talwar, Dr. Neeraj Gupta, Dr. Subhakar Kandi and Dr. Dhruvajyoti Roy, all of whom happen to be eminent Pulmonologists and senior members of the Indian Chest Society. Dr. D. Behera, moderated the entire Virtual Panel Discussion, on behalf of the Indian Chest Society.

Prof. Harish Hirani, Director, CSIR-CMERI, in his Chief Speaker address shared that the Human Body rejects a substantial portion of Oxygen during the process of Exhaling. During High Flow Oxygen Therapy, the Exhaled Oxygen can be trapped which in turn will decrease the Oxygen Load to a great extent. The CSIR-CMERI Oxygen Enrichment Unit (OEU) encompasses the functionality and goes beyond that of an Oxygen Concentrator. Since, the MSMEs are the pillar of the Indian Economy, CSIR-CMERI has organised a series of Virtual Awareness Exercises to bring them into the fold. As part of this initiative the technology has already been handed over to a number of MSMEs across India, who in turn will help in diffusion of the Technology. The Licensees has also very innovatively upgraded the aesthetics and ergonomics of the Technology.

CSIR-CMERI is working upon an Advanced Oxygen Mask technology which will provide protection against this Transmission of Viral Load. It has separate Supply and Exhaled Air passage. The Exhaled Air Passage/Channel is equipped with CO2 Scrubber and BV Filter. These innovative applications are a step towards the possibility of Recycling Oxygen from the Exhaled Air. Such Technologies are also ideal for Isolation Wards/Quarantine Zones, where there is an Air Recirculation Environment.



An Advanced OEU for Oxygenated Hospital Beds in Rural Areas is also being worked upon which will have independent Flow Rate and FiO2 controls. CSIR-CMERI is also working towards the development of 50 LPM and 100 LPM Hospital Model Oxygen Enrichment Technologies. Another Hybrid System Configuration for existing Hospitals will be able to function along with Oxygen Cylinders and Oxygen Lines of the Hospitals through an in-built Intelligent Controller System to complement Cylinder Stocked Oxygen with Enriched Oxygen. These advancements will facilitate the Decentralised usage of the Technology for 5-20 patients. When compared with Centralised Oxygen Generation Technologies available in the Market, the cost of the CSIR-CMERI Oxygen Technology lesser than 50%.

Dr. Deepak Talwar, Specialist Pulmonologist and Member of the Governing Body of the Chest Society who presented his discussion over various indication of Oxygen Therapy and shared that the idea of Prof. Hirani is brilliant for 'Make in India, Make for India'. He also discussed on pneumonia related hypoxia and the existing and chronic respiratory issues. He also shared that the studies show that in 85% of the cases the patients do not require Oxygen and in moderate to severe cases only the Oxygen therapy is needed to maintain the saturation level of 90. He also shared that the proper saturation level is 92-96% and above 96 % level may be also harmful.

Dr. Neeraj Gupta, Senior Chest Specialist Physician and Member, Governing Body of the Chest Society found the lecture of Prof. Hirani to be very encouraging. He also queried for comparison between PSA Plants and CSIR-CMERI developed OEU and the possible number of patients to be catered with the Institute developed device. He later shared his ideas on different delivery methods of Oxygen at Low Flow and High Flow rates. Talking over advantages and disadvantages of different methods. Dr. Gupta said that the Nasal Cannula though is a comfortable method, it may cause dryness of nose and throat to the patient too.

Dr. Subhakar Kandi, Senior Chest Specialist Physician and Member, Governing Body of the Chest Society said the CSIR-CMERI developed indigenous device is the need of the hour. He lauded Prof. Hirani for the innovative device which may be customized depending upon the requirement and needs of the patients which may be very beneficial for the patients. Dr. Kandi later spoke on the mechanism of Hypoxia and various types of Masks used for the Oxygen Therapy. He also pointed out that liquid oxygen which have a purity of 99.5% may be utilised for patients in ICUs whereas the devices such as that developed by CSIR-CMERI may be utilised for patients under non-critical conditions as well as during the post-hospitalization care at home.

Dr. D. J. Roy, Senior Chest Specialist Physician and Member, Governing Body of the Chest Society discussed over the sources of Medical Oxygen. He welcomed the idea and presentation of Prof. Hirani on the Oxygen Enrichment System and said that he described the topic and the technology very correctly. Dr. Roy talked on the different sources of Oxygen in hospitals like pressurised Oxygen Cylinders, Liquid Oxygen, Concentrators etc. He also mentioned about some of the disadvantages of Oxygen Concentrators.

Dr. D. Behera, Specialist Pulmonologist and President, Indian Chest Society while moderating the discussion talked on the history and discovery of Oxygen by Joseph Priestley and said that its importance has been recognized by everybody in the pandemic. He also applauded Prof. Hirani and CSIR-CMERI for dissemination of awareness about the Oxygen Enrichment Technology and enquired about the cost aspects of the different Oxygen Enrichment technologies developed by



CSIR-CMERI. Dr. Behera said that they are the end users and stressed upon the need for educating the society particularly the nursing staff about the innovations and technology diffusions. For this, he wished to arrange similar awareness programmes for the benefits of the nursing staffs and the MSME sectors.

A detailed Panel Discussion ensued among the above experts on the various Aspects of Oxygen Technologies in the Nation.

SS/RP (CSIR-CMERI)

(Release ID: 1730720) Visitor Counter : 372

Read this release in: Marathi , Tamil



Download PIB APP



FOR PUBLIC GRIEVANCES

GOI web directory



RTI and Contact Us

WHO'S WHO AT PIB

Telephone Nos of PIB Officers of Hqrs

Telephone Number of Regional Branch Offices of PIB

Public Grievance Officer

CPIOs Appellate Authority List

Information Manual



Citizen Charter

