



Ministry of Science & Technology

Indigenously designed & manufactured high purity oxygen concentrator being supplied to Indian hospitals



Posted On: 09 JUN 2021 3:39PM by PIB Delhi

inAn indigenously designed oxygen concentrator, which ensures high-purity oxygen supply, is now out in the market. An Indian startup has designed developed this affordable portable oxygen concentrator and is now manufacturing it for supply to various hospitals in the country.

Oxygen saturation levels of patients have been a major challenge in the treatment of COVID 19, especially in the second wave. Indian medical devices manufacturers and indigenous automation companies took this challenge up and came up with innovative designs of ventilators, portable respiratory aids, and related devices.

Mohali-based Walnut Medical has developed a 5L and 10L portable medical grade oxygen concentrators based on Pressure swing adsorption (PSA) technology in India with an oxygen purity of above 96% at a pressure of 55-75 kpa. Pressure swing adsorption technology separates single gases from a gas mixture. PSA is a non-cryogenic air separation (near ambient temperature separation processes) process that is commonly used in commercial practice. These two parameters are most critical for patients suffering from COVID or other respiratory problems.

The company was supported by CAWACH 2020 grant of the National Science and Technology Entrepreneurship Development Board (NSTEDB) under the Department of Science and Technology (DST), and they developed the world-class Oxygen Concentrator in a year to reduce dependence on imports.

Walnut Medical Oxygen Concentrator is tested for patient safety, electrical safety, electromagnetic compatibility (EMC), and as per International Safety Standards for Oxygen Concentrators.

The complete mould design, development of all electronics, moulding, control system, sieve tower, and all related parts and accessories has been done in India. It is currently being supplied to various government, defense, military hospitals in India and is also making them available for the general public through its distribution network across India.

DST's support helped them push their endeavor forward with 5Ltr and 10Ltr models and invest in quality moulds to compete against products from Japan, USA, and China. IIT Delhi incubation team worked with them to help the technology see the light of the day.

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Walnut Medical team with the portable oxygen concentrators



Walnut Medical Oxygen Concentrator

For more details, Siddharth Dhawan Co-Founder, Walnut Medical, can be contacted at (siddharthdhawan20@gmail.com , +91-9650622772).

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