



## STANDALONE, PORTABLE, SINGLE-USE AND WIRELESS VENTILATOR

### IITM Technology Available for Licensing

#### Problem Statement

- The most pressing shortages faced globally by hospitals during COVID-19 is lack of ventilators, which pushed manufacturers to increase output by **30- 50%**.
- The ventilators available in market are manually operated, require complex infrastructure requirements like **centralised O<sub>2</sub> supply** for the full functionality which makes them difficult to handle.
- To address these problems, there is a need for **personalised, standalone** ventilation system that can be used anywhere and can be wirelessly operated.

#### Technology Category/ Market

- Medical IT Devices
  - Healthcare Clinical Applications
- Applications in healthcare**
- Patients unable to breathe physically
  - Pocket size portable device
  - Hospitals (Multiple wards)

**Market** - The ventilators market is projected to reach **USD 1.9 B** in 2026 rising at **7.6% CAGR**.

#### Technology

- The technology is a ventilator system having portable ventilation unit **wirelessly controlling the use of oxygen** and compressor air individually for each patient.
- This system comprises a compressor, an oxygen cylinder, a mixing chamber *Fig.*, filters, controller, flow and pressure regulators.
- The control circuit comprises a processor and **a memory for storing patient data** which is further configured to determine **ventilation parameters** for each patient with respect to age, lung capacity, disease process, patient immunity to ensure personalized usage of the ventilating unit.

- Moreover, this is a **'Single-use'** system which can be **remotely-operated** to prevent the spread of the infection to the hospital staff and other users.

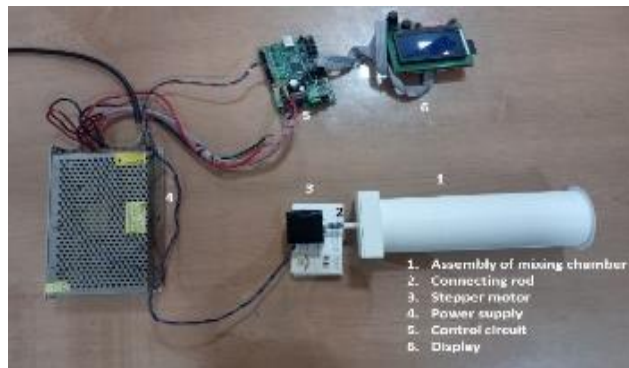


Fig. Functional arrangement of mixing chamber

#### Intellectual Property

IN202041016194  
PCT/IN2021/210015  
IITM IDF Ref. 2033

#### Value Proposition

- This **portable ventilator** is lighter, and provides a simpler interface for controlling the device based on patient data.
- **Real Time monitoring** blood oxygen level
- Capacity of Peak flow - **3 litre/sec**
- Volume capacity of the mixer chamber may vary from **200 ml - 1000 ml**.
- I:E ratio (Ratio of Inspiratory time to Expiratory time) - **1:2 - 1:4**

#### TRL (Technology Readiness Level)

TRL - 3/ 4, Proof of concept stage

#### Research Lab

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