



A DEVICE FOR DELIVERING AIR

IITM Technology Available for Licensing

Problem Statement

- Air pollutants are generated by nearly every facet of the industrial process, including raw material sourcing, product manufacturing, distribution, and humans need protection from these pollutants for better health.
- Moreover, it has been observed that **cold and dehumidified breathing air** provides comfort more than the surrounding air.
- In the present invention, an integrated system filters the air to the required level, **cools it up to 5 degree Celsius**, and provides directly to nostrils neither wasting nor allowing the mixing of unfiltered - unconditioned air.

Technology Category/ Market

- Electronic & Circuits
- Clinical Applications

Market - The global air filters market is projected to grow from \$14.68 billion in 2022 to **\$23.83 billion** by 2029, exhibiting a **CAGR of 7.2%** during 2022 - 2029.

Technology

- The invention provides a **personalized breath filter** for an individual by using a combination of (i) **air filtration**, (ii) **air cooling and dehumidification** and (iii) **personal ventilation**.
- The device may include a small battery-operated fan for drawing ambient air through the filter mediums (HEPA). Then, the filtered air is pushed through a **thermos - electric cooler** to cool and dehumidify the air. Further, the conditioned air is supplied to nostrils with an **“one-way”** air valve for inhaling.
- An air reservoir bag of **0.5 liters** is positioned between the thermo-electric cooler and inlet on-way valve to reduce the fan size. This ensures **longer duration for battery charge** and reduces size of the gadget.

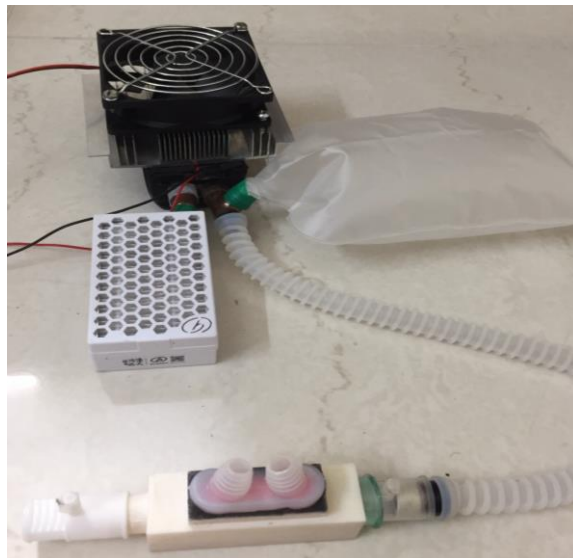


Fig. System and components

Intellectual Property

- IN 202141061798
- IITM IDF Ref. **2264**

Key Features / Value Proposition

- The device consists of a cooler unit, which is connected to **face attachment** through a connecting line, where the airbag is configured to create a **buffer of breathable air** to an individual.
- The device has **inbuilt storage battery** that is portable, and can be operated while on the move providing protection and comfort. Adaptable to scooters and three - wheelers.
- This can be also used **with or without cooling** system.

TRL (Technology Readiness Level)

TRL - 3, Proof of concept stage

Research Lab

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