

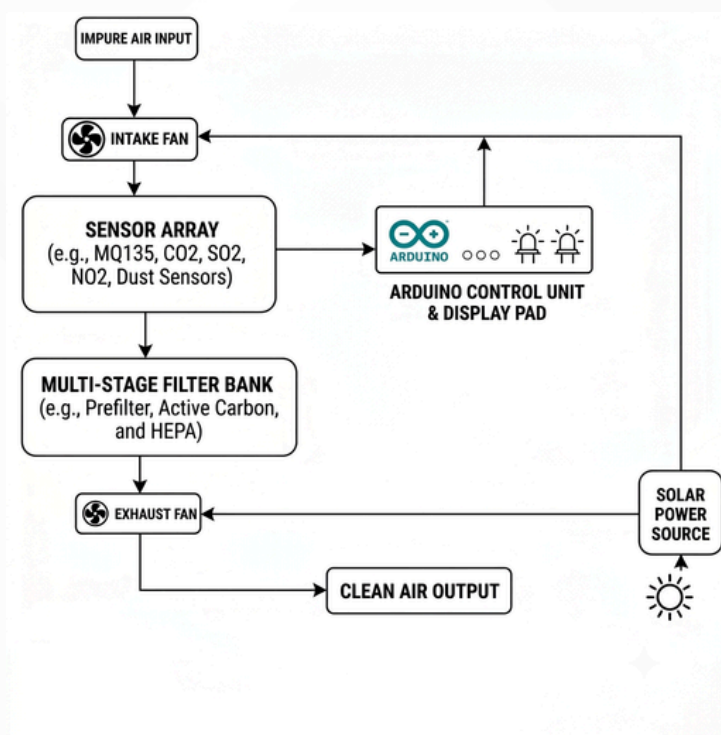
A Device to Filter Air Pollutants

Seeking parties interested in licensing and commercialization of technology.

Technology Brief

The portable, solar-powered air filter device comprises an enclosure equipped with a polycrystalline solar panel mounted on top, housing an intake suction fan and an array of pollutant sensors (including CO, SO₂, NO₂, and dust sensors) at a first end, an LED display mounted near the same end to reflect real-time air quality data, a multi-stage filtration assembly, and an exhaust blowout fan at the opposite end. Regulated by an integrated controller that adjusts fan speeds based on real-time sensor inputs, ambient air is drawn in and routed sequentially through an active carbon filter to adsorb contaminants and larger particles, a series of prefilters designed to remove remaining dirt and water droplets, and a High-Efficiency Particulate Air (HEPA) filter capable of trapping 90% to 99.97% of fine airborne particles sized 0.29-0.31 micro meter, before being blown out into the environment as purified air.

Block Diagram



Technical Applications

This air Scrubber device operates across several critical zones, including dust & gas control, which captures silica dust at crushing depots, protects personnel in shelters, and shields sensitive control room electronics from abrasive particles, SO₂, and NO₂, and maintenance & off-grid use, which provides temporary ventilation inside rotary kilns during turnarounds and uses integrated solar power for off-grid loading bays

Salient Features

- ✓ Enhanced Air Quality & Worker Safety
- ✓ Dual Power & Portability
- ✓ Extended Filter Life

Glimpse of the Technology



REFERENCE NUMBER

iTNT-TECH-0165



TECHNOLOGY SECTOR

Clean Energy & Sustainability



IP STATUS

Patent Granted



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TECHNOLOGY READINESS LEVEL

TRL 3

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