

LOW COST VENTILATOR

A Socially Relevant Project report submitted in partial fulfillment of the requirements

For the award of the degree of

BACHELOR OF TECHNOLOGY IN ELECTRICAL & ELECTRONICS ENGINEERING

Submitted by

**N. NAGA PRAVEEN
(19811A0206)**

**S. SURESH
(19811A0207)**

**A. VENU GOPAL NAGENDRA
(20815A0202)**

**K.LAXMI NARAYANA
(20815A0242)**

**N. PAVAN KUMAR
(20815A0243)**

Under the Esteemed Guidance of

Mr. ASARI NAGENDRA

Assistant Professor



**DEPARTMENT OF
ELECTRICAL AND ELECTRONICS ENGINEERING**

**AVANTHI INSTITUTE OF ENGINEERING AND
TECHNOLOGY**

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531113

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**DEPARTMENT OF
ELECTRICAL AND ELECTRONICS ENGINEERING**



CERTIFICATE

This is certify that the socially relevant project report entitled “**LOW COST VENTILATOR**” is a bonafide work submitted by **N. NAGA PRAVEEN, S. SURESH, A. VENU GOPAL NAGENDRA, K. LAKSHMI NARAYANA** and **N. PAVAN KUMAR** in partial fulfillment of the requirements for the award of degree of

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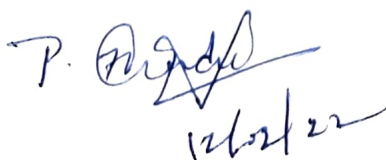

Internal Guide

Mr. Asari Nagendra

Assistant. Professor
Dept. of Electrical & Electronics Engg.
Narsipatnam.


Dr. T Srinivasa Rao
Professor & HOD

Dept. of Electrical & Electronics Engg.
Avanthi Institute of Engg. & Tech,
Narsipatnam.


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ABSTRACT

During Covid-19, entire world was in the need of Ventilators. Due to high demand in ventilators, there is a huge hike in the prices of medical ventilators in our country, so common man cannot effort it. This project describes the design and prototyping of a low-cost ventilator for use in mass casualty cases and resource-poor environments. The ventilator delivers breaths by compressing a conventional bag-valve mask (BVM) with a pivoting cam arm, eliminating the need for a human operator for the BVM. An initial prototype was built out of acrylic, measuring 11.25 x 6.7 x 8 inches (285 x 170 x 200 mm) and weighing 4.1 kg. It is driven by an electric motor powered by a 14.8 VDC battery and features an adjustable tidal volume up to a maximum of 750 ml. Tidal volume and number of breaths per minute are set via user-friendly input knobs. With a prototyping cost of only Rs. 2300, the bulk-manufacturing price for the ventilator is estimated to be less than Rs. 1,200. Through this prototype, the strategy of BVM compression is proven to be a viable option to achieve low-cost, low-power portable ventilator technology that provides essential ventilator features at a fraction of the cost of existing technology.

Keywords: Ventilator, Bag Valve Mask (BVM), Low-Cost, Low-Power.