**VITANEST**

A Nest for Vital Commodities

ABSTRACT -

Immunization is one of the best efforts that India is putting forward currently to fight against various vaccine-preventable diseases. The success of this program depends highly on the level of cold chain maintenance of the vaccines right from the site of manufacturing up to its administration. Coronavirus outbreak has questioned our old systems and made us create new paths and opportunities. As vaccine trials are being conducted successfully, we still are one step behind the world.

After a detailed Primary and Secondary research, it was found that the containers used for distribution of vaccines are not appropriate and do not match the specifications provided by WHO. Most of them don't have a temperature monitoring and regulating system, which makes them more dangerous. Potency can be adversely affected if vaccines are left out too long or exposed to multiple temperature excursions (out-of-range temperatures) that can have a cumulative negative effect.

The objective of this work is to design and develop a temperature-regulated vaccine container to maintain the potency of vaccines from the healthcare centres to the remote areas. For this, we are using Thermoelectric Peltier module with a temperature sensor and switch to maintain the temperature from 2 to 8 Degree Centigrade, which is the ideal storage temperature according to WHO. We are adding a Vaccum layer to preserve the temperature for a longer period and compensate for the efficiency of Thermoelectric Peltier module. With these small changes, we can provide effective transportation of Covid19 vaccines which would be more economical and could reach the last corners without losing its efficacy.