

A PROJECT REPORT ON
**PROTOTYPE OF SOLAR THERMOELECTRIC
REFRIGERATION SYSTEM**

A Project Report Submitted In Partial Fulfillment Of The Requirements For The Award
Of The Degree Of

BACHELOR OF TECHNOLOGY IN
MECHANICAL ENGINEERING

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CERTIFICATE

This is certify that the project work entitled **“PROTOTYPE OF SOLAR THERMOELECTRIC REFRIGERATION SYSTEM”** is a bonafied record of work done by **P.R.M PRASANTH** (19815A0360), **P. DURGA PRASAD** (19815A03A6), **K.VIVEKANANDA** (19815A0342), **K.SRAVAN KUMAR** (19815A0337) at AVANTHI INSTITUTE OF ENGINEERING TECHNOLOGY, Makavarapalem in partial fulfilment of the requirement for the award of Bachelor of technology in MECHANICAL ENGINEERING by Jawaharlal Nehru technological university, Kakinada During the year 2017-2021.

PROJECT GUIDE

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ABSTRACT

In this research Work, prototype of thermoelectric refrigeration system working has been designed and fabricated. This fabricated system is working on DC voltage, which is generated by the photo voltaic cells. The developed experimental prototype is having a refrigeration space of 10-liter capacity, which is refrigerated by using Peltier module (Supercool; PE-063-10-15, $Q_{max}=15\text{ W}$) and a heat sink fan assembly used to increase the heat dissipation rate from hot side of Peltier module. In the recent years, we have many problems such as energy crises and environment degradation due to the increasing emission of CO_2 and ozone layer depletion has become the primarily concern in both the developed and developing countries. Our project utilizes the solar energy for its operation. Solar refrigeration using thermoelectric module is going to be one of the most cost effective, clean and environment friendly system. This project does not need any kind of refrigerant and mechanical device like compressor, prime mover, etc. for its operation. The main purpose of this project is to provide refrigeration to the remote areas where power supply is not possible.