VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM, KARNATAKA

PROJECT REPORT

On

"DOMESTIC SOLAR WATER HEATER BY USING THERMAL FLUID"

(APPROVED BY KARNATAKA STATE COUNCIL FOR SCIENCE &TECHNOLOGY, BANGALORE)

Submitted in partial fulfillment of the requirement for the award of degree of

BACHELOR OF ENGINEERING
IN
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ABSTRACT

The domestic Solar Water Heating System using thermal fluid is to develop an optimized process that makes use of low heat provided from solar irradiation to drive a hot water. The main use of this technology is in residential buildings where the demand for hot water has a large impact an energy bills.

Solar water heating systems are most likely to be cost effective for facilities with water heating systems that are expensive to operate, or with operations such as laundries or kitchens that require large quantities of hot water.

While solar collectors are most cost-effective in sunny, temperate areas, they can be cost effective virtually any where in the country so should be considered.

The present domestic solar water heating systems are more effective in sunny days, during partially cloudy weathers efficiency of the hot water will be very much less. In order to overcome this problem we made an attempt in utilizing the evacuated space available around the copper tubes through which water is circulated. The evacuated space is filed with a low boiling point thermal fluid (Servotherm Medium), this thermal fluid is converted into steam, when the sun rays falls on the outer cover of the collector with the help of this steam, heat conduction takes place to the water, which is flowing inside the copper tubes. There by getting a water temperature more than commercially available solar water heating system.