

# Department of Mechanical Engineering

## **Name of the project:-**

*Fabrication and performance analysis of natural circulation flat plate solar water heater*

## **Name of the students:-**

1. Sanat Kumar pattnaik
2. Manoj Kumar sabat
3. birupakshya chodhury
4. Smruti ranjan mishra
5. Asutosh padhi
6. Patitapaban sethi

## **ABSTRACT:-**

In the project, a flat plate solar water heater was designed and fabricated. It also presents the experimental study of solar water heater with a collecting area of  $1.71\text{m}^2$  and variable working fluid (water) flow rate in the range of 3.78 kg/hr with/without Green house effect. The experimental data had been processed statistically through thermodynamic analysis. The aim of the project work is to calculate the instantaneous efficiency of the solar water heater with/without Green house effect.

The results indicate that the instantaneous efficiency increases with the increase in mass flow rate. In addition, it is found that the instantaneous efficiency is more with Green house effect than that of without Green house effect.



