Project Name – “PVT Proto”- A photovoltaic thermal solar panel

Problem Statement- To make a solar panel which can produce both electric and thermal energy.

Project Budget- INR 5000

Description-

As a part of my mechanical engineering curriculum, I chose to make a working PVT panel which was capable of transferring heat from the panel frame to a reservoir using a custom heat exchanging mechanism.

I lined the back of the solar panel with aluminium covered plastic tubing . The solar panel charged a battery which then powered a pump which circulated coolant from the panel into the reservoir for further use. I showcased the concept by using a thermocouple to display temperature change in the reservoir across the operation. This project I presented with a paper with the heat transfer efficiency calculations of the tubing incorporating few losses.

Materials Consumed-

1. A 20watt solar panel
2. Rubber tubing
3. Aluminium foil
4. Black tape
5. PVC Pipes @ Cement
6. 2 Litre Pet Bottle
7. Wiper washer pump
8. 12v Lead Acid Battery
9. Digital Am/Voltmeter
10. Thermocouple with digital readout
11. Switch
12. Solar charger box