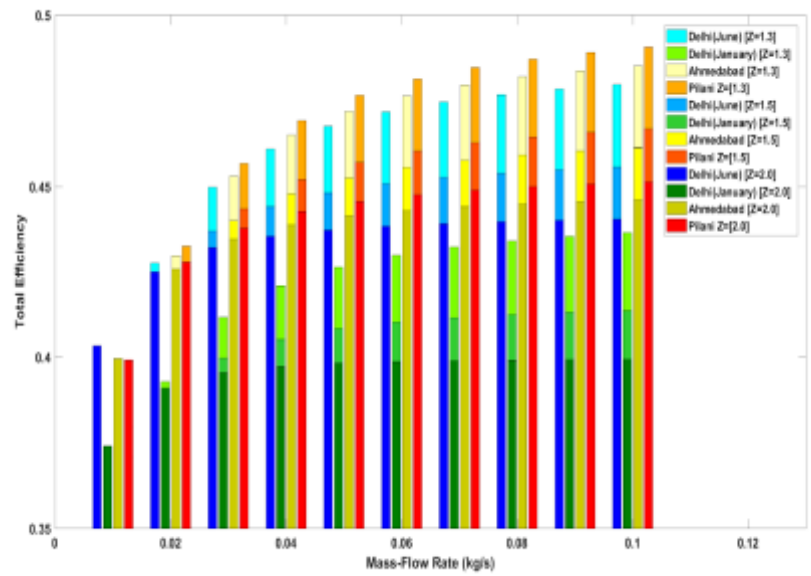
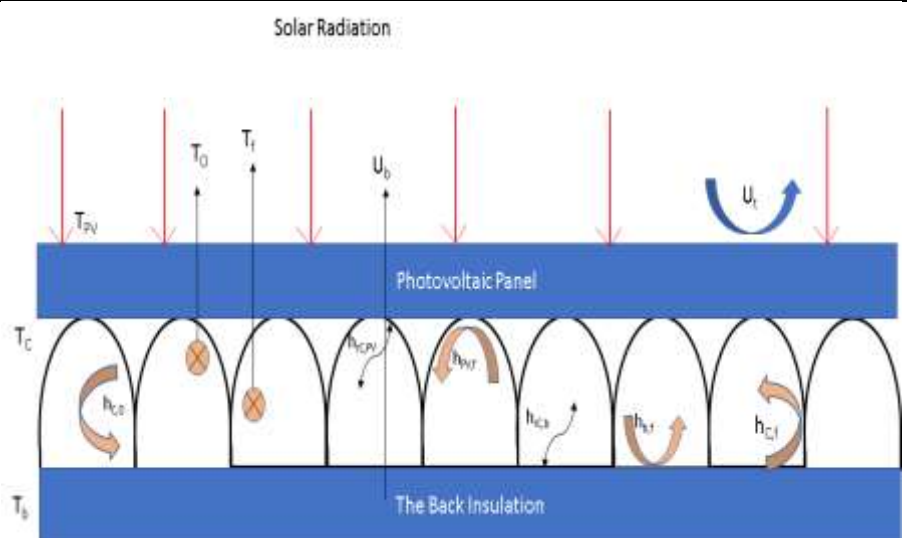


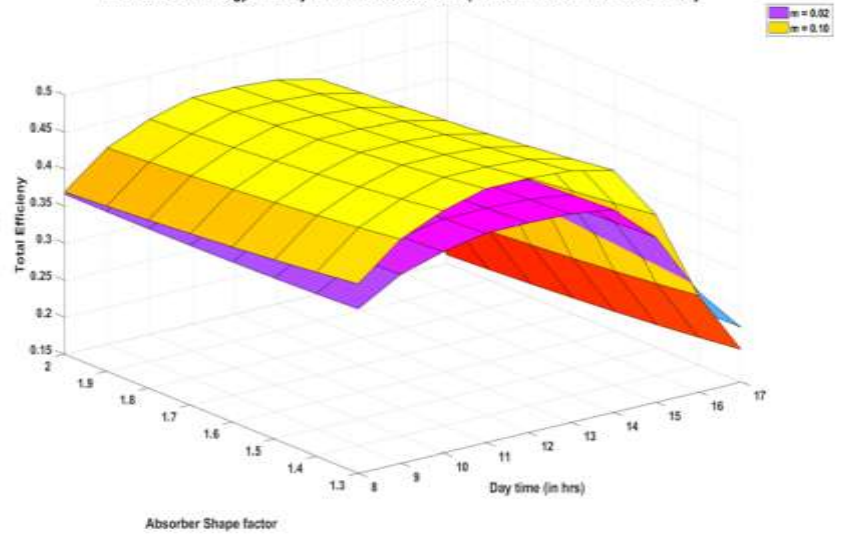
Format for the Project Submission

Project Id/No	AEL-01
Project Name	Effect of absorber plate on PVT module efficiency.
Project Members	Mentors – Dr. Swati Arora Dr. Harendra Pal Singh Mentee – Aayush Jain Arvind Singh
Abstract	<p>Photovoltaic thermal system are the most promising and fastest growing renewable energy technology for various applications in the developing and under-developed countries. In this work, we present a realistic mathematical model to study the performance of photovoltaic thermal system (PVT). The model considers the effect of the control parameter like shape factor (Z) and mass flow rate (m) simultaneously to optimize the efficiency of PVT system and also incorporates the effect of meteorological climatic conditions like, Intensity of solar radiation and ambient temperature.</p> <p>The main work focuses on not only finding the effect of intensity of solar irradiation and ambient temperature but also to find the best suitable shape and also optimized shape factor (Z). Very little work has been dedicated to the studies of PVT system under various climatic conditions with special emphasis to major cities of India.</p> <p>Based upon the climatic data of solar irradiation and ambient temperature the behaviour of PVT system is analysed here. Modified new model developed in the paper focuses on the study of dependencies of TO,TPV, energy efficiency and exergy studies on mass flow rate (m) for $m < 0.04 \text{ kg/s}$ and at high $m > 0.04 \text{ kg/s}$ and absorber shape factor (Z). Variation of Z helps to optimize the shape of grooves that is flat plate grooves and curved grooved structures.</p>

Project Photo



Variation of Total energy efficiency with different Absorber shape factor value at different hour of a day



Project Report

https://docs.google.com/document/d/1NG4ZMqMt5cBc6PuFU0Ga2k_sJfhIg2ULA0U216tzLw0/edit?usp=sharing