Department : **Mechanical**

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Group No: **16**

Guided By

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Project Title

DESIGN AND DEVELOPMENT OF PARABOLIC SOLAR WATER HEATING SYSTEM FOR SRPEC CANTEEN

Abstract:

Concentrating parabolic collectors absorbs the solar energy and convert solar radiation into heat for generating hot water and steam at a desire temperature and which can be also used for solar thermal applications. The developing countries like India where solar energy is easily available; there is need to develop technology according solar energy for power production, but the main problem occurs with concentrating solar power technology is the high cost of installation and low output efficiency. To solve this problem, a model of cylindrical parabolic solar collector is designed and developed using low cost highly reflecting and absorbing material to reduce initial cost of project and improve thermal efficiency. ASHRAE Standard 93, 1986 was used to evaluate the thermal performance and it was observed that this system can generate hot water at an average temperature of 80C per day with an average efficiency of 48% which is considerable higher than flat plate solar collectors. Hot water is produced by this system. It can be useful for domestic, agricultural process heat applications.

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