



Shri Vishweshwar Shikshan Prasarak Mandal's

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Padvika Mahavidyalaya**
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Principal's Message

It is a matter of great pride and satisfaction for VISHWESHWARAYYA ABHIYANTRIKI PADVIKA MAHAVIDYALAY to bring out the News Letter. The College has made tremendous progress in all areas academic, non-academics, capacity building relevant to staff and students. I am confident that this issue of College News Letter will send a positive signal to the staff, students and the person who are interested in the Technical education and Technology based activities. A News Letter is like a mirror which reflects the clear picture of all sorts of activities undertaken by a College and develops writing skills among students in particular and teaching faculty in general. I congratulate the Editor and Editorial Board of this News Letter who have played wonderful role in accomplishing the task in Record time. Also my heartfelt Congratulations to staff members and Students for their fruitful effort. With Best Wishes

P. S. Dharashive (Principal)

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2022**

Department of Mechanical Engineering

Vision

To provide technical education for students with advance technology in mechanical engineering.

Mission

M1: To impart highest quality education to students by collaborative environment and knowledge to make them globally competitive engineers.

M2: To develop alliances with educational institutions, industries and alumni to promotetraining, innovative ideas.

M3: To encourage students to adopt leadership skills in career by lifelong learning with ethics and values.

VAPM Alumni Meet 2022



Paper Published by Students

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Parabolic Water Heater

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Abstract- Solar radiation reaches the Earth's upper atmosphere with the power of 1366 watts per square meter (W/m²). Many technologies have been developed to make use of solar radiation. Some of these technologies make direct use of the solar energy (e.g., to provide light, heat, etc.), which helps us to generate electricity. But in order to generate higher temperatures with good efficiency a solar collector in the form of a parabolic trough reflector can be productive. The parabolic trough reflector is a solar thermal energy collector designed to capture the sun's direct solar radiation over a large surface area and focus, or more generally "concentrate it" onto a small focal point area increasing the intensity of solar energy received at the focal point. The project studies on parabolic through collector with header absorbers, and reflecting surfaces as well as maintains to cultivate interpretation with different flow rates as to predict the best form of efficient source. The absorber design is header copper tubes whereas the reflecting surfaces are taken as one being aluminium and the other as reflecting mirror. Another objective of the project is to understand various relations and equations related to the solar parabolic collector and to interpret the results from the tabulated values taken from observations. The experiment is conducted with water as the working fluid and readings are taken for different flow rates and reflecting surfaces.

Keywords- Pyrheliometer, Linear Fresnel Collector (LFC), Evacuated tube collector (ETC), Parabolic collector.

L LITERATURE REVIEW

- Kalogirou, S.A. et al (1994) presented a comparison of advantage and disadvantage of concentrating collectors against conventional flat plate collector. Due consideration is given to collector-aperture and rim angle optimization, together with the receiver-diameter selection. The design of the system is accomplished by considering their parameters: the optimized collector aperture and rim angle, and the receiver diameter.
- They found concentrating collectors exhibit certain advantage as compared to conventional flat plate type:
 - a) Higher thermodynamic efficiency can be achieved.

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- the flow rates. We see an increase of 50-70% in efficiency when the flow rates is decreased by 33%
- Mirror reflecting surface gives better efficiency compared to that of aluminium reflecting surface.
 - We mainly see the change in the solar intensity from the morning to the evening as the intensity rises in the morning hours and reaches its peak value between 12:30 PM and 1:30 PM then again decreases in the evening hours.
 - The efficiency of a parabolic trough collector mainly depends on Solar Intensity, type of fluid used, Reflecting Surface and flow rates.

2. Conclusion

We mainly conclude through the findings of our project how different flow rates play a major role in the working of a solar parabolic trough collector. As the efficiency shown by a parabolic trough collector is more than that of a flat plate collector, there is a scope for wider use as to increase the outcome of such. But there is a short disadvantage of parabolic trough collector as there needs to be a tracking device so as to check the functioning of the parabolic trough type collector. We further see that nature of reflecting surface also plays a major role in the output of the working of a solar collector.

As the renewable sources of energy is a prime concern in the fulfilment of energy supply in today's world, technical upgradation in the field of design of such technology is a must to gather maximum output. The solar parabolic trough collector is indeed a better alternative to the flat plate solar collector which is widely used today to extract solar energy, modification of the same will surely boost for a better yield.

3. Future Scope

- As the parabolic trough collectors are used for steam generation so they can be used in existing steam power plants for the pre heating of the water and this leads to increase in efficiency of power plant by reducing the fuel consumption.
- Working with different types of fluid as the working fluid to see how the efficiency changes.
- Two similar prototypes of model might be taken into consideration for finding out the comparison simultaneously as to keep the intensity constant as intensity changes day to day

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**Blood
Donation**



**Student Campus
Placement**



Best Teacher Award



**Tree plantation by
Students**



**School Connect Program
for 10th Students**



Felication Of Toppers

Ladies Haldi kumkum Program on occasion of Makar Sankranti



Vishwa Festival 2022