DESIGN AND FABRICATION OF PARABOLIC SOLAR WATER HEATER

By

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PARABOLIC SOLAR WATER HEATER

- **DESIGN**

  1.Area of trough

  2.Heat generated

  3.Heater efficiency

- **FABRICATION**

  1.Parbolic trough

  2.Copper tube

SCHEDULE

MONTH	ACTIVITY
DECEMBER	Commencement of project
JANUARY	Selection of project title
FEBRUARY	Completion of design
MARCH	Fabrication and submission of project work

OBJECTIVE

To design and fabricate a parabolic solar heater and compare its efficiency with the existing solar heaters.

PARABOLIC SOLAR WATER HEATER

- **The parabolic water heater is based on the principle of CONCENTRATED SOLAR WATER HEATING.**

- **The key concept of a concentrated solar water heating is the use of mirrors or other reflective surfaces to concentrate the sun rays, hitting a large area, at a point.**

- **The heat generated by this sun rays is used to heat the water placed at the point where the rays are concentrated.**

MATERIALS

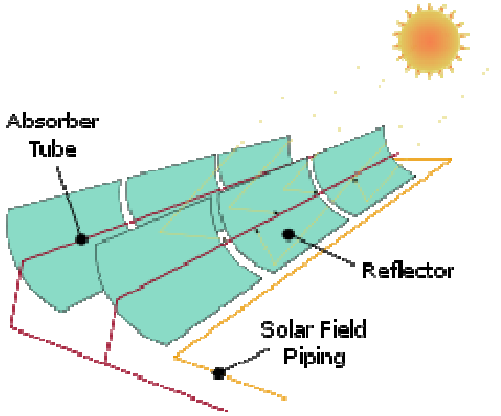
- **Parabolic trough – Aluminized mylar**

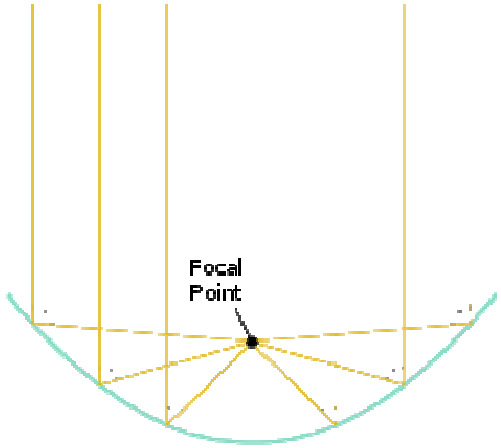
  - to reflect and concentrate the sun rays at a point.

- **Tube – copper (painted with black)**

  -acts as a container with water filled.

MODEL DIAGRAM





ADVATAGES

- **Very high temperatures reached. High temperatures are suitable for electricity generation using steam turbines.**
- **Good efficiency. By concentrating sunlight current systems can get better efficiency than simple solar cells.**
- **Concentrated light can be redirected to a suitable location via optic fiber cable**

DISADVANTAGES

- **Concentrating systems require sun tracking to maintain Sunlight focus at the collector**

- **Inability to provide power in diffused light conditions.**