

## Comparative Analysis of finned absorber plate with and without black paint in Solar Air Heater

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### ABSTRACT

The prospect of our globe is convolutedly tangled with the coming adoptions of energy, effective manipulation of renewable energy cradles is flattering progressively vital for up-to-date world as conventional fuels are perilous to environment and cannot withstand supply for extended period since they are depleting, ultimately they will diminish one day. Moreover, mandated energy is snowballing rapidly. In this scenario, solar energy is being perceived as possible variable resource for ever-growing starvation of the energy for the progress of nation at large and adopted globally. However, the small efficiency and intermittent availability of solar energy has called for the development by different techniques to enhance the productivity of the solar heater (Air) by coating the finned absorber with black paint. Naturally, black color absorbs the maximum heat from the irradiance. Which ultimately escalates the efficiency of SAH in form of solar thermal energy. Results depicted that, having reached 60 minutes of heating through solar radiations, solar air collectors attached with black painted finned absorber reached the 50 % of efficiency of solar irradiation of 900-1000 W/m<sup>2</sup>.

### KEYWORDS

Black paint finned absorber; Energy efficient absorber; Solar Air Heater; Solar energy; Solar thermal energy; Sustainable system

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