

## **EXPERIMENTAL INVESTIGATION ON ETERNAL POWER WIND TURBINE WITH THERMAL ACCUMULATOR**

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### **Abstract**

Natural wind occurs due to differential heating of the earth surface causes in its density differences. Even though the maximum conversion efficiency of the mill is 59.5% popularly known as Betz limit the practical turbine works at only 38% to 40%. Hence there is an urgent need to enhance the power coefficient to fulfill the power demand.. The present search may help to enhance the wind mill efficiency still higher and higher. Countries like India and China are very warm, particularly in summer and maintain temperatures in the ranges of 45<sup>0</sup>C to 50<sup>0</sup>C. So far, naturally available kinetic energy (K.E) of air has been used for the power generation. But the trail was not yet made to convert its thermal energy into its velocity. The present research is focused on the conversion of available thermal energy into kinetic energy using a thermal accumulator. Thermal accumulator is fabricated and experimented in our laboratory. Results obtained are far better and useful for wind power customers and manufacturers. The mill efficiency is increased interestingly to 53%.

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**Keywords:** Thermal accumulator, Power coefficient, Betz limit

**Subject Classification:** Wind energy conversion