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## EXPERIMENTAL INVESTIGATION OF LABORATORY MODEL WIND MILL USING CONVERGENCE THEORY

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## Abstract

Country India is potentially strong in wind energy with more than 7500 Km coastal length. So far, natural wind's kinetic energy availed due to the differential heating of earth surface has been used for the power generation. But the trail was not yet made to using series of convergence into its kinetic energy. The present research is focused on the concentration of kinetic energy. Nozzle theory states that either pressure energy or heat energy can be converted into kinetic energy. Using this principle an assembly of outer nozzle and series of inner nozzles are fabricated and fixed to wind tunnel for experimentation in the laboratory. The angle of attack, power coefficient of laboratory model wind mill was studied with various modification of nozzle assembly. The power coefficient may be enhanced and expected nearly 50 %, where as, practical mill lies in the range of 38%.

**Keywords:** Convergence of nozzle, Power coefficient, Betz limit **Subject Classification:** Method of improving wind energy conversion

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