

## Experimental Verification of On-Board Power Generation System for Vehicle Application

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**Abstract :** The usage of renewable energy sources is increased day by day to overcome the dependency on fossil fuels. The wind energy is considered as a prominent source of renewable energy. This paper presents an approach for utilizing wind energy obtained from moving the vehicle for cell-phone charging. The selection of wind turbine, blades, generator, etc. is done to have the most efficient system. The calculation procedure for power generated and drag force is shown to know the effectiveness of the proposal. The location of the turbine is selected such that the system remains symmetric, stable and has the maximum induced wind. The calculation of the generated power at different velocity is presented. The charging is achieved for the speed 30 km/h and the system works well till 60 km/h. The model proposed seems very useful for the people traveling long distances in the absence of mobile electricity. The model is very economical and easy to fabricate. It has very less weight and area that makes it portable and comfortable to carry along. The practical results are shown by implementing the portable wind turbine system on two-wheeler.

**Keywords :** cell-phone charging, on-board power generation, wind energy, vehicle

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