

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**BELGAUM**



Project Report on

**IMPLEMENTATION OF HYBRID BICYCLE WITH MULTI  
POWER SOURCES IN THE DRIVE TRAIN**

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## **ABSTRACT**

As we all know the fuel prices especially the petrol price is rising steadily day by day. Again the pollution due to vehicles in metro cities & urban areas is increasing continuously. To overcome these problems, an effort is being made to search some other alternative sources of energy for the vehicles. The Hybrid bicycle developed is driven by HUB motor fitted in rear wheel & operated by solar energy and alternator i.e., conventional and non-conventional sources of energy. The solar panels mounted with the help of frames in the front handle will charge the battery & also the battery is charged through alternator which is mounted on the front wheel which in turn drives the hub motor. When the bicycle is idle, the solar panel will charge the battery and while moving when the wheel of the cycle reaches to 900 rpm that time the energy from the alternator will again charge the battery, so in this way the bicycle is being charged by two sources simultaneously. As a part of dissertation work, the hybrid bicycle is fitted with a dc hub motor on rear wheel of a bicycle with power rating of 250W and with a travelling speed of around 20-25 kmph. It is provided with a pair of lead acid batteries of 35 Ah each, a photovoltaic solar panel with capacity of 20 watt, a alternator which produces of 12V , accelerator and motor controller of 24v 25Amp. There is also a provision for charging of the battery with 220-240V, AC wall outlet supply, in case of poor solar supply due to cloudy weather for once to start if it is not used for longer time.