



# FABRICATION OF SELF-CHARGING ELECTRIC BIKE

A Project report submitted  
in partial fulfillment of the requirements for award of  
Degree of  
**BACHELOR OF TECHNOLOGY**  
IN  
**MECHANICAL ENGINEERING**

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**CERTIFICATE**

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## ABSTRACT

This study is based on e-bikes, mainly the 'Pedelecs' (under Swedish standards). Pedelecs<sup>1</sup> is the category of e-bikes which indicates electric bicycles only, that has specific standard in terms of motor power and speed limitations. We are concerned with respect to Sweden, in the analysis, especially because though it is already defined by EU for Europeans, it still varies in some countries, within Europe itself. In this research and experiment, we have brought useful revelations about its features in terms of power, comfort and cost. Likewise, our efforts have been to test its reliability on technical grounds, geographical conditions, people's awareness and interests. Similarly, on effective grounds, ratio of bike users, import conditions, its growth and declines trends, and other influencing factors have been analyzed to understand e-bike's possibilities in Sweden.

To highlights e-bike's features and importance, we have done a thorough investigation, taking comparative analysis with ordinary bicycles and normal vehicles, by using common elements like cost effectiveness, power efficiency, leisure service, easy accessibility, environment effects and so on. The findings have proven e-bikes to be the most effective solution on various grounds than any other transport alternatives especially in short distance and inner city traveling.

In theoretical details on e-bikes, we have introduced details about the components applicable in e-bike, how they operate, their importance in terms of effectiveness with respect to power consumption and energy dispatching (motor capacity), quality of performance (types of components and features) and other comparative technical aspects. To understand the ground reality better, a short survey have been conducted to give some understanding about the awareness people are having regarding e-bike, their remarks towards this product, and based on their conclusions, our predictions report on its development and popularity chances in Sweden.

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