



**COLLEGE OF ENGINEERING & TECHNOLOGY**

(APPROVED BY AICTE AND AFFILIATED TO UNIVERSITY OF CALICUT /  
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY)



**PROMOTIONAL ACTIVITIES-  
ENVIRONMENT FRIENDLY BIKE-  
DESIGNED BY RCET STUDENTS**



**PRINCIPAL  
ROYAL COLLEGE OF ENGINEERING & TECHNOLOGY  
AKKIKAVU**



# Royal

**COLLEGE OF ENGINEERING & TECHNOLOGY**

**Chiramanangad. P O. Akkikavu. Thrissur-680604**

## A NOVEL HYBRID TWO WHEELER INCORPORATING REGENERATIVE BRAKING FOR BETTER SOC



**Mr.vishnu T** ,student of S8 EEE secured second prize for idea presentation for the topic “Hybrid Two Wheeler With Regenerative Braking” for the program innovators meet conducted on behalf of IETE south zone tech fest 2K20 at NSS college of engineering on 27/1/2020 & 28/1/2020

### **ABSTRACT**

Internal Combustion Engine (ICE) vehicles cause severe atmospheric pollutions due to the emission of carbogenic compounds and other greenhouse gases.. A 100cc two wheeler emits around 112 gram CO<sub>2</sub> per kilometre. Under this situation the government has encouraged manufacturing of electric or hybrid vehicle. The complete transformation from conventional vehicle to EV requires be a huge increase in electricity consumption and is time consuming. A hybrid vehicle consists of two sources of energy,



# Royal

**COLLEGE OF ENGINEERING & TECHNOLOGY**

**Chiramanangad, P O, Akkikavu, Thrissur-680604**

## **A NOVEL HYBRID TWO WHEELER INCORPORATING REGENERATIVE BRAKING FOR BETTER SOC**

conventional IC engine and electric motor. A regenerative braking system can be included in the vehicle, so that the energy developed in the motor during deceleration can be utilized for charging the battery. For the efficient recovery of this energy a super capacitor bank is used. The stored energy in super capacitor bank is then utilized for charging of the battery. With this, periodic charging of the battery can be avoided and SOC of the battery can be maintained by the self-generated energy in the vehicle. This regenerative braking will improve the efficiency of the vehicle from 16% to 70%. So with this method a vehicle which has a maximum operating range of 50Km could be extended from 58Km to 85Km. The better operating range and reduced amount of CO<sub>2</sub> emission of around 66 grams per kilometre are the benefits. Simulations are validating the conclusions.

VISHNU T

DELWIN JOSEPH



**Royal**

**COLLEGE OF ENGINEERING & TECHNOLOGY**

**Chiramanangad, P O, Akkikavu, Thrissur-680604**

**A NOVEL HYBRID TWO WHEELER INCORPORATING  
REGENERATIVE BRAKING FOR BETTER SOC**