

ARSCT International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Impact Factor: 6.252

Volume 2, Issue 8, June 2022

IJARSCT

Design and Manufacturing of Dry Battery Based Electric Bicycle

Prof. R. K. Nanwatkar¹, Mr. Rushikesh Deshpande², Mr. Rahul Ingale³, Mr. Vaibhav Kshirsagar⁴, Mr. Aditya Kulakrni⁵

Assistant Professor, Mechanical Engineering, NBNSSOE, Pune, India¹ UG Student, Mechanical Engineering, NBNSSOE, Pune, India^{2,3,4,5}

Abstract: This project deals with the design and fabrication of a low-cost portable electric bicycle kit, which can be mounted on existing bicycles. It has two modes of drive; one is by pedaling and other one is by using an electric motor. The electric bicycle kit consists of a 250WBrush type DC motor which is powered by a 24V lead acid battery. E-bikes use rechargeable batteries and lead acid ones can travel up to 40 km/hr. and some electric bicycles speed can do excess of 55km/hr. There are two types of Electric Bicycle; one has a smaller motor to assist the rider's pedal power. The other one is a more powerful E-bike which are closer to moped style functionality, but all retain the ability to be pedaled by the rider. Major drawback of a traditional bicycle is it increases rider fatigue on long distance travel. Thereby implementing an external drive (electric motor), which can be switched between pedaling and electric drive and this will help to increase the range of travel, better riding experience and reduce rider fatigue. Expected range of an E-Bike is around 20-40 km on a single charge. E-bike can travel at a speed of 20 km/hr.

Keywords: Low-Cost Portable Electric Bicycle Kit, Rechargeable Batteries, Electric Motor, etc.

REFERENCES

- Vivek V. Kumar, Karthik A, "Design and Implementation of Electric Assisted Bicycle with Self Recharging Mechanism" International Conference on Innovations & Advances in Science, Engineering and Technology [IC - IASET 2014]
- [2] Deep R. Prajapati, Kunjan Shinde, Abhishek Mhaske, "Design and Fabrication of Electric Bike.
- [3] Boopathi S, Saranya A, Raghuraman S, "Design and Fabrication of Low-Cost Electric Bicycle"
- [4] Christian Gorenflo, Ivan Rios, Lukasz Golab, "Usage Patterns of Electric Bicycles: An Analysis of the We-Bike Project.
- [5] Ian Vince McLoughlin, I. Komang Narendra, Leong Hai Koh, "Campus Mobility for the Future: The Electric Bicycle".
- [6] C. Abagnalea, M. Cardoneb, P. Iodicea, R. Marialtoc, S. Stranoa, "Design and Development of an Innovative EBike"71st Conference of the Italian Thermal Machines Engineering Association, ATI2016, 14-16 September 2016, Turin, Italy.
- [7] Mitesh M. Trivedi, Manish K. Budhvani, Kuldeep M. Sapovadiya.