

Implementation of E-Bicycle with Smart Display

K. Pragathi¹, A. Spandana², A. Srija³, J. Vaishnavi⁴, M. Sanjana⁵, K. Deepthi⁶

P. Sai Shreeja⁷, N. Sri Lakshmi Nanda⁸, Ch. Santosh Kumar⁹

UG Students, Department of Electrical & Electronics^{1,2,3,4,5,6,7}

Assistant Professor, Department of Electrical & Electronics^{8,9}

BVRIT HYDERABAD College of Engineering for Women, Hyderabad, India

Abstract: Based on growing demand of electrical energy, environmental concern and exhaustion of fossil the need of eco-friendly power generation using renewable energy resources got invoked and these are getting utilized in different sectors. In this paper, implementation of electrical assisted bicycle and its display unit is designed which indicates basic parameters of electrical assisted bicycle. The energy to the bicycle is provided by rechargeable battery packs and for charging a solar power is used. This system reduces the efforts of pedaling to the user. In this system a 24 volt, 250 watt motor kit and A display screen made with TFT (thin-film transistor) display is used. Solar panel used is 37watt 17.60 volt dc power supply and for better charging in less time higher rating of solar panel can be used. DC-DC boost converter is used for step up voltage from solar panel.

Keywords: Electric Bike, DC-DC Converter Solar Photovoltaic Module, DC Geared Motor, Lithium Ion Batteries.

REFERENCES

- [1]. Sunikshita Katoch, Rahul, Ranjit Kumar Bindal; "Design and Implementation of Smart Electric Bike Eco-Friendly" International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8, Issue- 6S4, April 2019
- [2]. Arduino.2018. Official Available at: <https://www.arduino.cc>
- [3]. A.E. Khaled; S. Helal. (2018).A framework for inter-thing relationships for programming the social IoT2018 IEEE 4th World Forum on Internet of Things (WF-IoT). vol. , issue. , pp. 670-675, IEEE Conferences, DOI: 10.1109/WF-IoT.2018.8355215
- [4]. J. Dill, G. Rose, "Electric bikes and Transportation policy-Insights from early adopters" SAGE Journals-Vol.2, Issue-1,2012.
- [5]. E.Fishman,C.Cherry,"E-bikesinthemainstream-ReviewingaDecadeofresearch"-Vol 36Issue1,2016.
- [6]. S. Washington, N. Haworth, "Bike shares impact on car use-Evidence from the United states, Great Britain, and Australia"-Vol. 31,PP. 13-20, 2014.
- [7]. C. C. Chan "The state of the art of electric and hybrid vehicles "Proceeding to IEEE, Vol. 90 Issue 2, PP. 247-275,2017.
- [8]. K. J. Astros, R. E. Klein, "Bicycle dynamics and control-Adapted bicycles for education and research" IEEE control system magazine, Vol. 25Issue4,pp.26-47,2017
- [9]. P. Zhang. , "Industrial Control Technology: A Handbook for Engineers and Researchers". https://www.researchgate.net/publication/224299571_Electric_bicycle_using_batteries_and_supercapacitors.