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Impact of C 45 material manual gear transmissions in two wheeler

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Abstract

Several environmental issues based on the emission of hazardous gasses from vehicles and the shortage of fossil fuels resulted in the rise of e-vehicles for transportation purposes. Bikes have become part of our life. The usage of these vehicles cannot be depleted over time hence, as a solution conventional system of electric bikes came into existence, but they possess many variations in all aspects i.e., rising and lowering of torque and its relevant speed is not under consideration and also lags behind on riding an IC engine. In this work replaced the engine head with a BLDC motor to supply the required mechanical power to the gearbox which in turn coupled to the rear wheel via transmission chain will drive the bike. Manual gear transmission is given in order to achieve the required torque and related speed as per the rider's requirements. The main objective is to give a conventional system of converting a normal combustion-powered engine system into an electrical energy-powered engine that produces relevant torque as per required. This bike has a variable level of torque that comes in handy while traveling on a mountain or in inclined roadways.

Introduction

Electric bikes can be good urban commuters, despite the lack of comprehensive fast-chargers that limit their long-distance capability. Furthermore, the lack of a clutch makes them suitable for novice riders or those with no prior experience with manual transmissions. However, the EV conversion business demonstrates that manual transmissions may still be used in electric automobiles and trucks. After the level plate gasket is installed and the motor mounting plate is secured [1], [2], [3]. After that, the motor is mounted on the motor mounting plate, finishing our electric engine with gears installation. A manual transmission will be available on the Kawasaki Endeavour electric motorcycle. The Kawasaki Endeavour will be the name of Team Green's first electric motorcycle. The Japanese two-wheeler behemoth has just published a teaser video for their next electric bike, which will include a manual transmission. Kawasaki has revealed intentions to introduce electric and hybrid two-wheelers as part of its long-term strategy to develop alternative-fuel vehicles [4], [5], [6], [7]. Hiroshi Ito, president of Kawasaki Motors, stated that the business plans to release 10 electric and hybrid two-wheelers by 2025. This design was around the same size as the brand's mid-size Z650 sports bike and had a fast-charge battery with a stated range of 62 miles. Kawasaki's Z and Ninja bikes, including the high-speed Ninja H2R, have the same trellis chassis [8], [9], [10]. Furthermore, VisorDown reports that the on-stage bike included pieces from both the Z400 and Z650.

Section snippets

Methodology

The existing methods of e-bikes are a direct transmission of power from the motor to the rear wheel of the bike. Hence the load is directly drawn by the motor by a simple transmission so the speed cannot be varied at the maximum rate [11], [12], [13]. These kinds of drawbacks result in a reduction in the usage of these vehicles. Hence we took an initiative in finding some solutions to overcome the drawbacks of the currently available. The problem at the point of youngsters is the speed and…

Hardware used

In general, the hardware required for our Electric bike are as follows:

- Bike to be converted.…
- BLDC motor 48 V, 1KW, 3000 rpm…
- Power Controller…
- Gear shift assembly…
- Battery-lithium iron phosphate, stack, 48 V, 60A, 24Ah…
- Battery management system…
- Rectifier and Filters…
- Battery Level indicator and interface.…

…

Conclusion

The electric bike with manual gear transmission is the maximum deployable one in the conventional way of converting normal IC engines to electric engines and also plays a vital role in zero-emission. The future enhancement involves various systems that could enhance the project by finding difficulties in performing various options and other interactive systems. The future enhancement can be done by various additional features such as giving a feature that intimates the present gear running and…

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.…

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