NUTAN MAHARASHTRA INSTITUTE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

"Advancement in Electric Scooter for Achieving High Speed"

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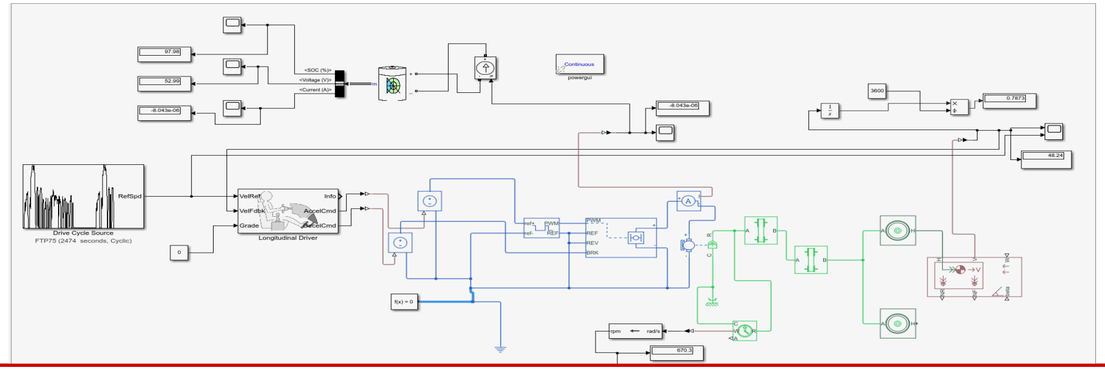
Abstract: Conventional vehicles utilize petroleum derived fuels to provide good performance and long range. But there are some disadvantages such as low fuel economy and exhaust gas emissions causing environmental pollution. In this respect, interest in electric vehicles is increasing. In this study, the dynamic model of an electric vehicle was created with MATLAB/Simulink. -In fact electric mobility becomes in different fields of research an important matter, realistic models of electric vehicles (EV) become more significant. There are just small amount of EVs existing and produced compared to conventional vehicles. The existing types of EVs are differing significant in concept and technology so that their physical models for mobility simulations and their electrical model for grid simulations have to be created accurately.

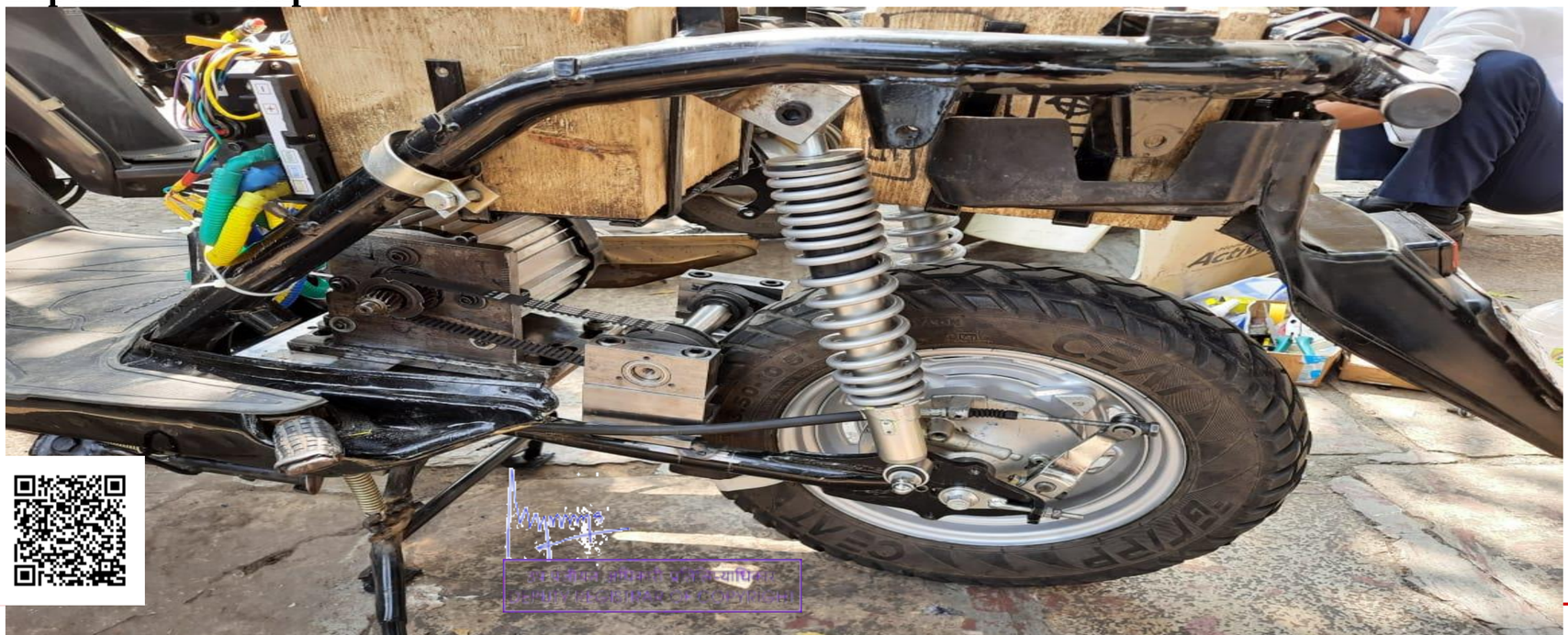
Introduction:

The rapid economic development of India has been accompanied with increase in the road transportation activities in urban and rural areas. The maximum People uses mopeds, motorcycles, and scooters as there primary vehicle for one or two passengers which results in increase in pollution. The main reason to design the E bike is to overcome the problem with the pollution and with the economy. The E bike is a battery operated vehicle that is very economical with low maintenance cost and less pollution.

Simulation Model:



Experimental Setup:



Conclusion and Future scope:

Conclusion:

Electric Vehicles are definitely more environmentally friendly than internal-combustion vehicles. Batteries are being engineered to have a long life. When the Electric Vehicles become more widespread, battery recycling will become economically possible. Research into other energy sources such as fuel cells and renewable fuels make the future look brighter for Electric Vehicles.

Future scope:

- With battery prices reportedly falling 73% since 2010, electric cars are expected to be as cheap as fuel-powered cars in the foreseeable future.
- All the major Automobile manufactures are working on Hybrid Electrical Vehicle.
- Efficiency of Hybrid Electric Vehicle will further increase in future.
- Price of vehicle will reduce due to increase in production rate of Hybrid Electric Vehicles.

References:

1. **MATHEMATICAL MODELING AND SIMULATION OF AN ELECTRIC VEHICLE T.A.T. Mohd1 , M.K. Hassan1,2 and WMK. A. Aziz1**
2. **Design and Implementation of Smart Electric Bike Eco-Friendly ISSN: 2278-3075, Volume-8, Issue- 6S4, April 2019**
3. **Modeling and Simulation of Electric Vehicle to Optimize Its Cost and Range ISSN: 2249 – 8958, Volume-8 Issue-6, August 2019**
4. **Modeling of an Electric Vehicle with MATLAB/Simulink VOL. 2, NO:4, 9-15 2018**
5. **The Electric Bicycle: Worldwide Research Trends**

Program Outcome (PO's) (Tick whichever applicable)

a	b	c	d	e	f	g	h	i	j	k	l
✓	✓	✓									

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