



## MANAGEMENT OF ELECTRIC COMPONENTS IN EV BYCYCLE

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### Abstract:

Increasing demand for non-polluting mechanized transportation has revived the interest in the use of electric power for personal transportation and also reduced reliance on automobiles. A low cost alternative to an automobile is a bicycle. However, the use of bicycles has been limited to very short trips or as a recreational activity. This report describes the design of an electric assisted bicycle that will extend the range of a typical rider. The rate of improvements in technologies is at an exponential level despite that the electric bicycle is a concept that has been very feasible for years but has not been fully explored. The human electric bicycle is designed to provide electromagnetic propulsions to a bicycle therefore relieving the user of having to produce the energy required to run the bicycle. The system design is based on mechanically coupling a dc motor as the primary power source to drive the bicycle and electrically wiring the motor together with a dc rechargeable battery and efficient transmission from the source to the motor.

**Keywords**–Pedel Electric, Traction Battery, Electric Vehicle (EV), Hybrid Electric Vehicle (HEV).

### 1. INTRODUCTION:

A wire harness, sometimes referred to as a wiring loom, cable harness, or harness, is an organized configuration of wires, cables, and connectors used to safely and effectively transfers electrical power and communications between different parts of a system. It acts as a primary conduit for wiring protection, organization, and routing, especially in complicated systems with plenty of connections needed.

### 2. IMPORTANT PARTS OF A WIRING HARNESS:

#### i.) Wires and Cables :

Insulated to prevent electrical shorts and damage, these semiconductive parts are usually constructed of copper or aluminium.

#### ii.) Connectors:

Plugs, sockets, terminal blocks, and other interface devices that facilitate dependable and safe connections between cables and parts.

#### iii.) Protective Heating:

Insulating material that cover wires, including corrugated tubing, braided nylon, or heat-resistant plastic.

#### iv.) Ties and Clips:

The harness is bundled and fastened to the system's structure using cable connections, clips, or straps, which minimise

movement and damage risk when the system is in use.

**v.) Function and Purpose:-**

Wire harnesses safe guard and arrange electrical wire, guaranteeing dependable connections between parts while lowering the possibility of damage or electrical shorts.

**vi) Components:-**

Wires are usually constructed of copper or aluminium for conductivity, wires are the fundamental components of a wire harness.

**vii) Connectors:**

Terminals, plugs, sockets, and other connector types are included in wire harnesses to facilitate rapid and safe connections between components.

**viii.) Protective Sheathing:**

To shield cables from environmental risks such as moisture, heat.

**ix.) Motor:**

The EV's motor is connected to the battery, controller, and throttle using wire which provide exact control over power supply and speed.

**x.) Battery:**

Harnesses make it easy to connect the battery pack to the motor and to other accessories like lights, displays, and charging ports.

**xi.) Controller:**

The wire harness connects the controller to a range of switches, actuators, and sensors, enabling smooth electrical system communication and control for the plug-in vehicle.

### III. Crucial Things to Keep in Mind When Choosing Plugs for Wire Harnesses:

1. **Environmental Conditions:** Select plugs that are rated for the temperature extremes, moisture, dust, and vibration that the wire harness will experience.
2. **Current Rating:** Verify that the plugs can sustain the necessary electrical current without overheating or resulting in voltage dips from the attached components.
3. **Connector Compatibility:** To ensure a tight and secure fit, choose plugs that are compatible with the mating connectors on the components to be connected
4. **Installation Ease:** Take into account plugs that make installation and removal simple, particularly in applications where regular maintenance or component replacement is anticipated.
5. **Durability and Reliability:** Choose plugs made from high-quality materials that offer durability and long-term reliability, minimizing the risk of electrical failures or connection issues.

## 6. Lights and Accessories:

To ensure correct operation and safety, wire harnesses provide power to turn signals, Taillights, Headlights and other accessories.

# RESULT



38-16 = 22km

## IV. CONCLUSION

In conclusion two wheeler electric vehicles (EVs) are a major development in transportation technology that have several advantages in terms of performance, sustainability, and efficiency. Two-wheelers have completely changed how we commute thanks to the use of electric power systems, which offer a green and clean substitute for conventional internal combustion engine vehicles.

### Key points to consider in the conclusion for a two-wheeler EV project:

- 1. Environmental Impact:** By lowering carbon emissions and air pollution, two-wheeler EVs help to promote a greener and cleaner form of transportation.
- 2. Efficiency:** Two-wheeler EVs with electric motors have excellent torque and efficiency, which lead to seamless acceleration and better overall performance.



3. **Cost Savings:** Two-wheeler EVs are a great way to cut down on fuel and maintenance costs because they have lower running costs than fossil fuel-powered cars.
4. **Technological Advancements:** The viability and uptake of two-wheeler EV have been further increased by the development of cutting-edge battery technology, motor controllers, and charging infrastructure.
5. **MARKET POTENTIAL:**

There is a bright future ahead for two-wheeler EVs due to the rising demand for environmentally friendly transportation options as well as government incentives and laws supporting electric mobility.

In summary, the shift to two-wheeled electric vehicles heralds a paradigm shift towards sustainable, efficient, and cleaner mobility options, opening the door to an environmentally friendly future for urban transportation.

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