



HELMET WIPER

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Abstract

During rains it is hard to ride a bike. So, Helmet wiper is designed which is located on the eye shield of the helmet. The presence of a smart helmet wiper will make two-wheeler riding easier and safer in rainy season since the driver won't be bothered by the continuous rain drops disturbing their vision. The wiper can be activated whenever it starts to rains, which can be activated and controlled with the help of the button provided on the wiper itself. Commands to the wiper will be given with the help of Arduino Mega and power will supply by rechargeable Lithium-ion Batteries. LED strips will be provided at the back of the helmet so that the driver would be visible to other drivers on the road. This feature can prevent accidents to the maximum. Anti-Fog mechanism is provided inside the helmet to prevent the fog from blurring the vision of the driver. Our project is mainly focused on how to prevent accidents during rains especially for two wheelers. The components used are Arduino Mega, Lithium-ion Rechargeable Batteries, OSK-C903W LCD Rechargeable battery, Wiper, Servo motor, Copper wires, LED Light.

1. INTRODUCTION

With the onset of monsoons, it becomes a difficult job for the bikers to look ahead clearly through the helmet screen. While many high-end helmets offer anti-fog screens that help a but no helmet provides an active solution to remove the water from the helmet screen. The helmet wiper will help everyone solve helmet related problems in the rain. Our helmet wiper is an Arduino operated wiper system, similar

to the wipers of cars. The wiper is placed vertically on the helmet so that it can work efficiently. Since the helmet wiper has been developed specifically for the motorcycle helmets, the design of the device is aerodynamic that ensures that there is no drag during high-speed rides. Helmet Wiper is fixed at the top of the face shield so that it can be easier to remove the liquid on the helmet shield. As per the device maker, the helmet wiper

does not come out even while riding at high speeds. The battery life of the device lasts for a long duration as lithium-ion battery is being used.

2. RELATED WORK

Finger visor wiper:

These wipers are worn on the rider's finger or thumb. It has a wiper on one end which can be used for the removal of water or mud drops on the visor. Fits over most riding gloves. The motorist would need to stop the vehicle and clean the visor with the wiper on his finger. If the motorist tries to clean the visor while riding the bike it can be risky as he would be driving only with one hand. This finger wiper is not ideal for heavy rains. Moreover, the fit is not adjustable. The wiper won't fit on casual finger it needs gloves in order to be tight enough.

Disadvantages:

- Need to stop the bike in order to use it.
- Doesn't fit exactly.
- Need of extra materials like gloves.

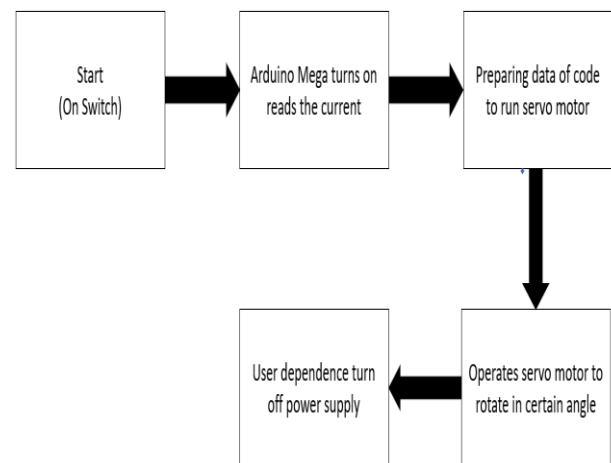
The Helmet visor is inserted with anti-fog coating. This coating works efficiently to show the motorist clearly while driving their motor cycle during rains. The layer is hydrophobic. Hydrophobic materials are known as non-polar materials with a low affinity to water, which makes them water repelling. So, when any liquid falls on it,

the liquid would not stay on the visor but instead slips down. This layer will be available for small part of the screen as shown in the above figure. The rest of the helmet will not be covered. The hydrophobic material does not let the rain water settle on the wind shield wherever the layer is placed. In the rest of the area the water would still be present.

Disadvantages:

- The patch does not cover the wind shield completely.
- As the layer sticks to the wind shield it would be an issue if the layer comes out especially during heavy rains.

3. IMPLEMENTATION



Block Diagram

In order to prevent accidents to the maximum we designed a helmet wiper to clear the liquid on the eye shield so that the path and the traffic can be visible to the motorist. The helmet wiper uses Arduino-

Mega to control the helmet wiper. The wiper moves at a particular time interval and angle provided in the code.

During rains it is hard for motorists to ride their bikes. When the motorists decides to ride the vehicle in the rain, they are prone to accidents as the water on the eye shield of the helmet blocks the view of the motorist. The vision becomes blurry and the motorist won't be able to see the path or the traffic.

Designing a helmet wiper that can be used during rains for better vision which is simple to operate.

Objective:

- 1.The wiper should be light in weight.
- 2.It should be easy to use.
- 3.The cleaning must be fast enough to show the path.
- 4.Should be affordable.
- 5.Strong enough to hold on to the helmet

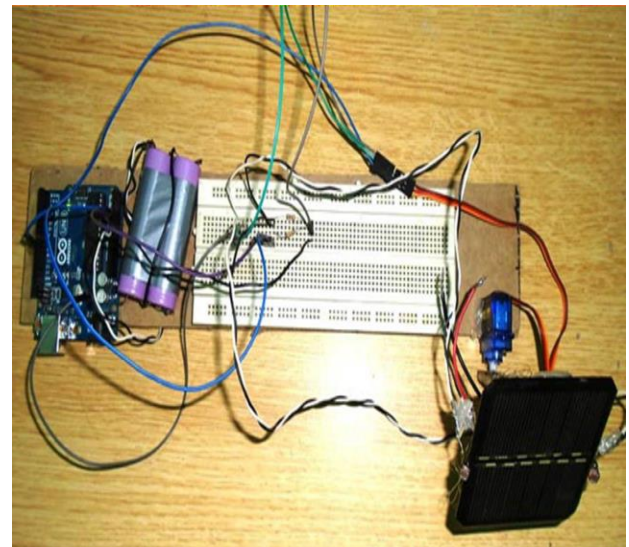
During rains it is hard for motorists to ride their bikes. They are prone to accidents as the vision becomes blurry and the motorist won't be able to see the path or the traffic. So, we designed a helmet wiper. Helmet wiper is designed to overcome the problems faced by the motorists during rains. Our project consists of wiper fixed on top of the helmet, which removes the liquid on the visor when activated. This can be activated by using a switch button

provided. The servo motor is used to rotate the wiper. Arduino Mega contains the code which has the code in it used to determine the speed and time interval of servo motor. The wiper then cleans the liquid on the visor of the helmet.

The copper wire is used to keep the wiper stable. This wipe is charged with the help of lithium-ion battery which is rechargeable.

4. EXPERIMENTAL RESULTS

Our design includes very simple mechanism. The design of helmet wiper is explained below.



A wiper is fixed on the top of the helmet. This helmet is rotated with the help of the servo motor placed. The movement of the servo motor is based on the code written in the Arduino mega.



Helmet wiper

5. CONCLUSION

The **HELMET WIPER** is placed on the wind shield of the helmet. It cleans the water or any other liquid which is on the helmet wind shield by moving at a certain angle, which can be turned on or off with the help of a switch button. The speed of the helmet wiper can be adjusted based on the user requirements. This helps on the reduction of road accidents during the rains. Here by, we conclude that our project **HELMET WIPER** will be very helpful for motorists during the rains as it shows

the path clearly to the motorists. Our main aim is to reduce accidents to the maximum especially during rains, this can be achieved with the help of our helmet wiper.

6. REFERENCE

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