

1	<b>Project Reference Number:</b> 46S_BE_4405
2	<b>Name of the College:</b> EAST WEST INSTITUTE OF TECHNOLOGY
3	<b>Project Title:</b> IMPLEMENTATION OF ANTI-GLARE HIGH BEAM AND BENDING LIGHTS FOR VEHICLE
4	<b>Branch:</b> ELECTRONICS AND COMMUNICATION ENGINEERING
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6	<p><b>Abstract:</b> Due to the many accidents in our diary life we are IMPLEMENTATION OF ANTIGLARE HIGH BEAM AND BENDING LIGHTS FOR VEHICLES .to improper use of high beams can cause glare interference to oncoming drivers or pedestrian. The benefit of proposed adaptive high beams is to avoid glare interference for improving night driving safety. This is done by connecting headlights and steering. The accidents can be avoided by incorporating Steering Control Headlight Mechanism. The system can be adopted in any type of four-wheel vehicles/trucks or trailers etc. without being an economic burden on the end user. The notion of steering controlled headlight according to the steering turning angle is its novel part.</p> <p><b>Keywords:</b> Sensors, high beam, bending lights, steering wheel</p>
7	<p><b>Introduction:</b> This project is steering controlled (or directional) headlights, that are usually a separate set of headlights fitted to road vehicles beside the usual low beam/high beam headlights and their feature is that they turn with the steering, so that the driver of the vehicle can see the bend, what he is actually turning into. These types of headlights appeared on production cars in the1920's and are still around now a days, but not very popular, although they make night time driving safer Directional headlights are those headlights that provide</p>

improved lighting especially for cornering The shortened distance of night vision, lack of effective safety warning, and improper use of high beams are the main causes of night traffic accidents. Drivers inevitably feel uncomfortable because of the oncoming glare. In particular, the oncoming glare can result in the driver requiring an additional reaction time when applying the brakes. A traffic accident occurs if a vehicle or pedestrian is within the braking distance. Therefore, effective avoidance of glare interference is an important factor that can improve night driving safety.

**Background:**

**Title: Adaptive Head light System for Automobiles.**

**Authors:** AishwaryaJ, AmruthaR, Dhanalakshmi MS.

It is done using adaptive headlights are an achieve safety feature designed to make driving at night or in low lights conditions safer by increasing visibility around curves and over hills it is controlled the angle of the headlight and controlled the intensity of the headlights. The main purpose of this system is to present to illuminate blind spots while driving and prevent accidents.

**Title: Automobile Cornering Lights Using Steering Mechanism.**

**Authors:** Kona BalaBhanu, Bongu Bhavani, Mukkamala Girish Kumar, Sheik Khasim, Dilip Kumar Choudhary, Dr.Ramana Babu.

This is done by connecting headlights and steering. Present day automobiles don't have effective lighting system. Due this many accidents are taking place during night times especially in that section. The accidents can be avoided by incorporating Steering Control Headlight Mechanism. The cornering lamps function is activated when turning, it helps increasing safety in dark.

**Title: Anti-Glare Headlamp a Safe Option for Better Vision to the Rider.**

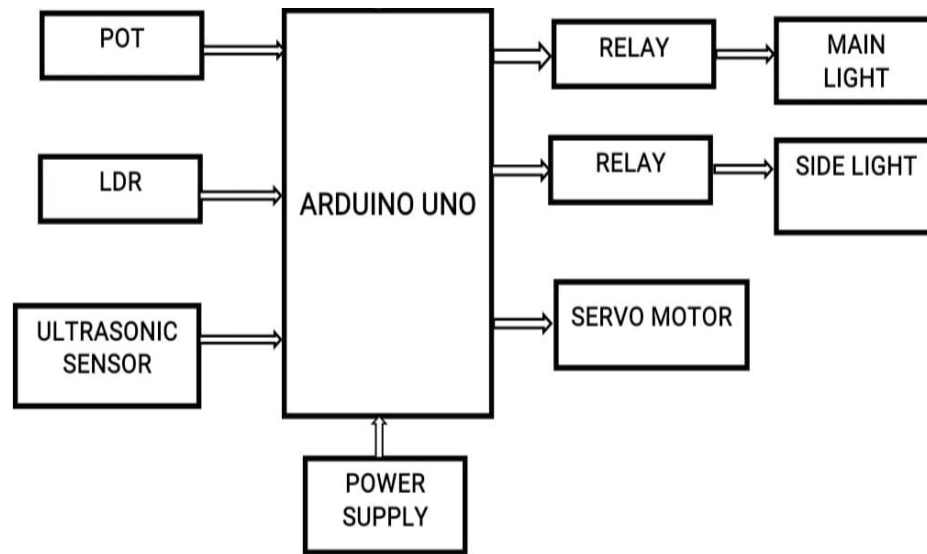
**Authors:** Shrinivas S. Metan, Abhishek R. Kshirsagar, Govind N. Samleti, Vinayak K Patki

The antiglare headlamps are one in which helps to drive safely at the night time .The anti-glare film that reduces glare and halos around the headlamp light at night and eliminates unattractive reflections on the eyes. It used to reduce the glare of the light. This is important as too much lighting has been shown to affect your eyes and reduce nighttime visibility.

**8 Objectives of the project:**

We are implementing ANTIGLARE HIGH BEAM AND BENDING LIGHTS for vehicles due to the number of accidents affecting our daily lives. Improved driving safety at night will be achieved by avoiding glare interference with adaptive high beams.

- a. The cornering lamp function is activated when turning.
- b. Depending on the steering angle, the fog lights swivel left or right.
- c. They illuminate the area to the side of car, considerably increasing safety in the dark or while driving in poor lighting conditions.
- d. Improved driving safety at night will be achieved by avoiding glare interferences with adaptive high beams.

**Methodology:**

**Figure1:**Block diagram of antiglare high beam and bending lights by using Arduino

- AFS (adaptive front-lighting system) is a front-lighting system that can change the light pattern and illumination area according to the vehicle's state such as the velocity.
- The Adaptive headlights are an active safety feature designed to make driving at night or in low-light conditions safer by increasing visibility around curves and over hills.
- Proposed system controls two operations: One is to control the angle of the headlight and another are to control the intensity of the headlight.
- The auto high beam is what regulates the operation of the headlights and illuminates the road ahead using both high and low beams.
- The system in which can switch between high and low beam automatically in response to the detection of light from the oncoming traffic light.
- It's easy to appear visual "blind spot" in the curve roads. when coming into a corner in order to obtain headlamps beam which is adaptive to the corner.
- When driving into the corner, driver turns the steering wheel and it will change a certain angle, resulting in vehicle body moving forward.
- The headlamps beam which is original is parallel to the road surface will produce tilt, causing the front lighting area decreased.
- However, because of guide effect of the light beam, horizon of the driver who are turning the corner will be narrower than driving straight. Further, it's the narrow horizon driving at a corner that is very averse to a traffic safety.

**TechnicalHardware and Software Requirements:****Hardware Requirements:**

- LDR Sensor
- Ultrasonic Sensor
- Arduino
- Relays

- Servo motor
- Pot

**Software Requirements:**

- Arduino IDE
- Embedded C

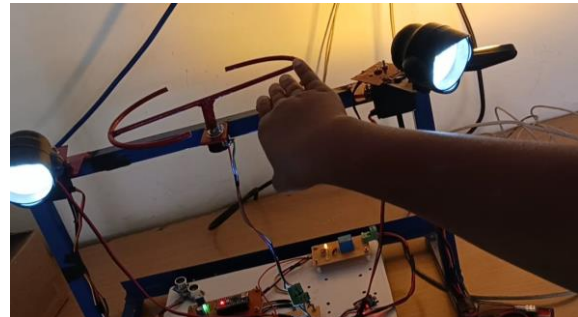
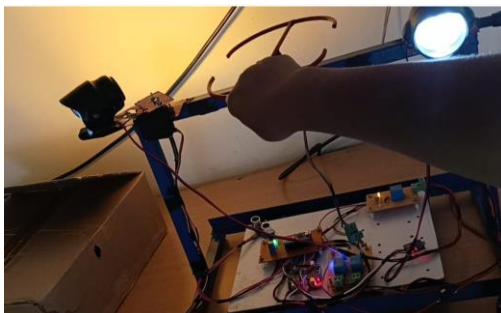
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**Results and Conclusion:**

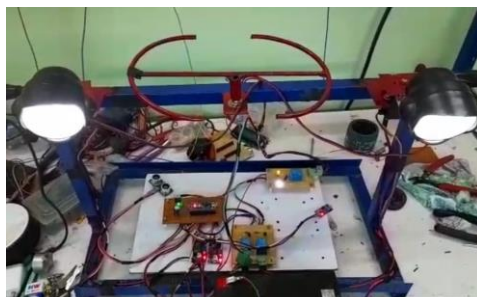
**Results:**



**Figure 2:** Designed Prototype Model



**Figure 3:** Bending Lights while turning a Steering Wheel



**Figure 4:** Converting High beam to Low beam

**Conclusion:** In this project we design an adaptive high beam controlling system to avoid glare interference during night time. And also design the steering input the system rotates the headlamps towards the curve improving the visibility of the road and aiding the driver. While, the implementation of antiglare high beam and bending lights for vehicles can enhance safety and visibility on the road, there are also several challenges associated with these advanced lighting systems.

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**Scope for future work:**

- **Integration with Other ADAS Technologies:** Antiglare high beam and bending lights could be integrated with other advanced driver assistance systems (ADAS) to provide even greater safety benefits. For example, they could be combined with adaptive cruise control or lane departure warning systems to provide a more comprehensive safety package.
- **Increased Energy Efficiency:** By reducing the need for high-powered headlights, antiglare high beam and bending lights could help improve the energy efficiency of cars. This could potentially reduce energy consumption and save fuel.
- **Customizable Lighting:** As these technologies become more advanced, they may also become customizable to the driver's preferences. This could include options such as adjusting the colour or intensity of the lighting, or even creating personalized lighting patterns.
- **Use of Artificial Intelligence:** As AI technology continues to advance, it may be possible to use it to further enhance antiglare high beam and bending lights. For example, AI could be used to automatically adjust the lighting based on real-time road conditions and other factors.

In conclusion, the future scope of antiglare high beam and bending lights in vehicles is promising. These technologies have the potential to greatly improve safety on the road, increase energy efficiency, integrate with other ADAS systems, become customizable to the driver's preferences, and even use AI technology to further capabilities.