

# Mechanized Turning Lights in Vehicles

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**Abstract-**The Main aim of this project is to design and fabricate a simple steering controlled automatic headlight system, especially to spread the lights to the corner of the roads. Lighting Technology plays a very important role in motor vehicles with regard to the safety of vehicles. The adaptive lighting system is a safety system designed to help you see more clearly at night without affecting other drivers. The system may also help the drivers to see more of the corner when turning. This automatic turning light enhances the convenience of the drivers and further, when a vehicle takes a deep turn, the headlight does not point to the direction that we are pursuing. Therefore, we propose an automation system that illuminates the headlight beam towards the concerned area when taking a steep turn which will reduce accidents in turnings. This model is connected to the front and steering wheel system of an automobiles which helps to maintain the headlight numbers and the front wheels that is pointed in the same direction at all the times. So, in order to avoid poor visibility and improper illumination, this prototype is designed. This helps for the overall travelling drivers to have a better, safer driving experience.

**Keywords:** Automatic head light, vehicles, turning points, illumination, steering, safety, Accidents, visibility, convenience, directions, lighting technology, travelling drivers.

## INTRODUCTION

In developing and developed nations the Governments are giving higher priority for the road infrastructures. They consider the road infrastructure will boost their economy in many ways and it is a true fact too. The automobile industry also improved their vehicles in many aspects, mainly speed of the vehicles. The accidents on roads are having very high adverse effects compared to olden days due to modern vehicles with the provision of high speed. Many studies throughout the world have proved that the accident percentage is high during night time compared to the day time. Accidents during the night have become very common in the current scenario. Automobiles have headlights that light up the road in

front of the vehicles and fail to provide illumination at bends. Reasons like lack of visibility, and inability to view objects at the corner of the turn have plagued automobile drivers during late-night travels. The main reason for an accident on roads having steep turns and curved roads in hilly areas is the presence of blind spots. Blind spots are the areas around the vehicle that cannot be directly observed by the driver.

These areas cannot be seen directly by looking forward, backward, or by looking through either of the side mirrors. Blind spots may occur due to inappropriate positioning of the vehicles, and the side mirrors of the vehicle. Other causes of blind spots are steep curves in roads, lack of visibility due to weather conditions, etc. The corner areas cannot be seen in normal vehicles while turning in the curves which cause problems for drives. To overcome the problems an automatic light is fixed in the vehicle that will make the drivers drive the vehicle conveniently in the curves. An automatic front-light systems framework ensures better visibility to drivers by carrying the beam projections as the vehicle traverse. One of the reviewed approaches has an orientation control system for the headlights which actually rotates the right and the left beams independently and makes the beam parallel to the curved roads as much as possible for the better visibility in the curved, narrow or mountain roads. In these kinds of systems, they have used two systems, one is for the vehicle and road and the second system is the actual head light system. Our project proposes a headlight system which swings horizontally based on the movement of the steering angle and they also swing vertically based on the distance of the opposite car approaching this vehicle. This system gives major importance for the consistency, accuracy, and the availability of the components used in the automatic turning light system. Adaptive headlight is 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 is to control the intensity of the headlight.

BLOCK DIAGRAM



Fig 1. Block diagram

CIRCUIT DIAGRAM

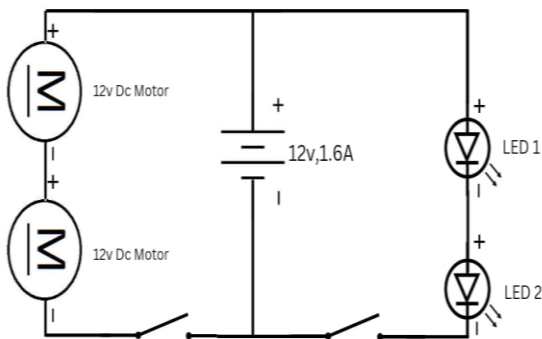


Fig 2. Circuit diagram

WORKING MODEL



Fig 3. Working Model

RESULT AND DISCUSSION

The vehicle is tested with the light that we have added to the steering wheel. In order for the driver to view more of the corner when turning, the light evenly distributes illumination across the entire road. The automated turning light will distribute light across the roadway when you turn and turn your steering. The light is integrated in the normal vehicles that is incorporated with the steering that helps the driver to drive conveniently. The light will be fully scattered in the road in turnings

The results as obtained and shows that the mechanised turning light worked successfully. The red light that we integrated will illuminates the light over the road completely so that driver can see the things clearly in the road while driving. In this system steering plays a major role because the light turns automatically in the turning along with the steering.

Headlights actually moves side to side as the steering wheel turns illumination at corner is not possible while taking a curve. But when we use this system in vehicle the light will be scattered completely in the road which helps the driver to drive the vehicles on the turnings. This adaptive lighting system is stable.

REFERENCE

- [1] <https://www.ijraset.com/research-paper/adaptive-headlights-system-for-fourwheelers#:~:text=do>

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%20and%20incoming%20vehicles

- [2] <https://mycardoeswhat.org/safety-features/adaptive-headlights/>
- [3] <https://rts.i-car.com/collision-repair-news/crn-1292.html>
- [4] <https://gomechanic.in/blog/what-are-adaptive-headlights/>
- [5] <https://www.ijert.org/adaptive-headlight-system-for-automobiles>