



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Special Issue 2, April 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

 9940 572 462

 6381 907 438

 ijirset@gmail.com

 www.ijirset.com

Automatic Control of Headlamp High Beam and Low Beam in Automobiles

Jabez.I¹, Kannan.S.B², Kaviarasan Kumar³, Dr. Sebastian Vindro Jude.P⁴

U.G. Students, Department of Electrical and Electronics Engineering, Sri Ramakrishana Engineering College,
Coimbatore, Tamil Nadu, India^{1,2,3}

Associate Professor, Department of Electrical and Electronics Engineering, Sri Ramakrishana Engineering College,
Coimbatore, Tamil Nadu, India⁴

ABSTRACT: Headlight are one of the most important things in the automobiles. On the upcoming world the usage of headlights in automobiles are controlled in such a way that the high beam and low beam of the vehicles are controlled by manually. In this paper we are going to see the control of the headlight's high beam and low beam are controlled automatically by hardware setup. It additionally gets rid of the requirement of guide switching with the aid of the driver which is not always finished always. The construction, working and the advantages of this prototype version is discussed in this project.

KEYWORDS: LDR, Glaring, High Beam, Low Beam, Headlamp.

I. INTRODUCTION

The quantity of vehicles on our streets is expanding consistently. This in flip constrained practically all the vehicle makes to contemplate more security contraptions and computerized controls to append with this product to guarantee assurance in all road circumstances through mass float guests. Whenever asked, one must constantly refer to that evening utilizing might be exceptionally massive as a result of the stunning light issues and the normal diminishing of headlights with the guide of guide approach that consistently makes

weariness the main thrust extraordinarily at the hour of top site guests. So obviously to put off this lasting issue, a computerized system needs to come however much faint the headlamp naturally each time required.

Basically, a programmed scoop is a unit, which could precisely decide while the front lamp bar wants to be diminished, and which plunge the headlamp from High pillar to a plunged bar. A difficulty can likewise get up eventually of city drives, that normal location of light may furthermore reason gleam inside the Front lamp and this can reason bother. This can be win over through restricting the activity of DIMMER circuit best for HIGH pillar and as city drive needs handiest Low shaft, the issue doesn't exist. One more reasonable problem is recognition of Road lighting apparatuses. This will be addressed through holding sensor in this sort of manner that, chance of distinguishing Street lamps is negligible. In a vehicle front lamp, a 'meeting' shaft (plunge pillar) is outfitted further to the driving bar (high bar) for you to diminish the astonish for the ones approaching head on to the vehicle.

The Auto Plunging Gadget for a headlight should consequently trade the Front lamp Circuit to both utilizing shaft or plunge bar given a particular arrangement of road conditions, without the intercession

of the driver. The current practice is to work the plunge switch physically. The potential of the fog light is to enlighten the road in front of the vehicle to show things in advance from a solid distance; on the equivalent time it should rationale least irritation and glare for drivers coming from the elective side. Manual plunging isn't continuously being achieved agreeably therein frame of mind to an extension of reasons, which consolidates sheer substantially pressure 3 worried in activity of the scoop switch masses of occurrences



every evening. (Their general for an unmarried evening could be 1,000 assuming we remember 8 hours of visiting and one coincidentally find every one-moment and can surpass this reach within the event that one goes on streets with thick guests). The various thought process comprises of an overall propensity of paying more prominent interest to guiding oversee at the advantage of dunking at some stage in a fundamental vehicle gathering circumstance especially inside the instance of weighty stacked vehicles. More intentions are the physiological and mental country of an idea process force, that is persuaded through an implication of things like working hours, financial issues, then components and so forth.

Another major reason is 'inner self difficulty', which makes everybody stand by till the contrary man or lady starts plunging, which probably won't occur. A successive reason for wounds at evenings is that the brightness due to approaching engines which immediately blinds the rationale power's inventive and perceptive. It requires three to eight seconds for an individual with great vision to recuperate from the glare and during this time the vehicle will have covered a significant distance in complete murkiness, and it'll besheer favorable luck on the off chance that it gets away from a touch of destiny.

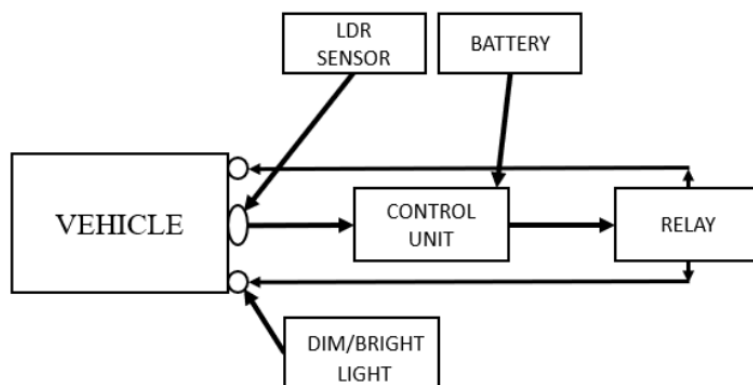
II. RELATED WORK

- The lights in the vehicles are very less bright in the olden days. So people often get hurt. Large number of accidents occur due to it.
- As per the survey more than lakhs of lives die due to road accidents per year. So the introduction of light glowing up all the time in automobiles are introduced.
- Even though this method was introduced accidents occur in the evening time that causes due to glaring of the light. So the low beam high beam light was taken into the account.

III. METHODOLOGY

- Low beam and High beam concept was introduced due to large number of accidents occurrence. So it was controlled in manually method.
- This method which is proposed was to control the Low beam and High beam of the automobile automatically in a particular range.
- The Low beam and the High beam was controlled by the range of headlights from the opposite vehicle to the user vehicle

The algorithm automatically decreases and increases the beam of light in the automobiles while crossing.



IV. EXPERIMENTAL RESULTS

The LDR (Light Dependent Resistor) is the main source in the project idea. LDR which runs through the circuit acts as a resistor to the light at a particular range. Here we used 200V LDR. The battery source is the power supply to the hardware setup. Here we used 9V Battery for the power supply. LED (Light Emitting Diode) is the lighting source of the hardware setup. LED gives the output of the hardware setup as the brightness of the headlight controlling displayed via LED. Here we used 3-5mm LED type. Relay switch which acts as the switching part of the hardware setup used in here. As the coil inside the SPST relay switch gets the maximum amount of the current, the switch gets closed, and the power is supplied to the circuit. Here we use 12V DC supply SPDT relay switch. The voltage regulator acts as a voltage regulating system as it can automatically control the voltage supply to the circuit. Here we use LM317 as a voltage regulator. As the light from opposite vehicle touches the LDR of our vehicle, the light from the opposite vehicle helps in regulate the voltage of the LDR causing the headlight of our vehicle to decrease and as the light from our vehicle touches the LDR of the opposite vehicle and helps in decrease light of the opposite vehicle. The automobile approaches nearer the headlight gets decreases and so the headlight of the automobile increases as the automobile moves away. This hardware setup of automatic control of headlight must be implemented to all automobiles.

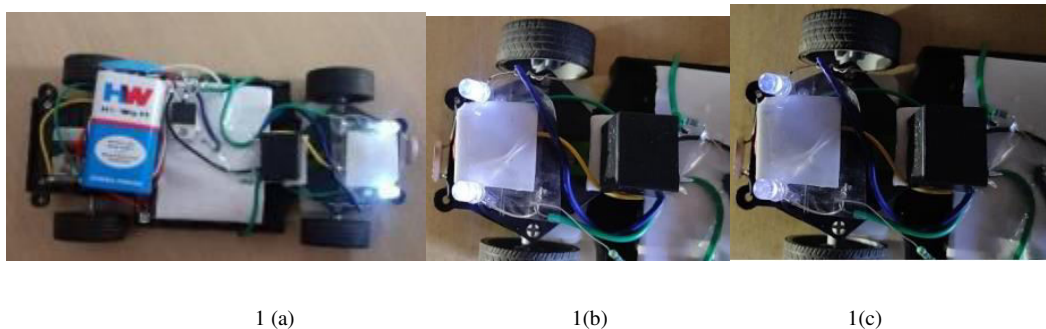


Fig.1. Full design of the project (a) Original image (b) Before the approach of light from opposite vehicle (c) While approach of light from opposite vehicle

V. CONCLUSION

In this project, a new approach of automatic head lamp brightness switch using LDR Sensor with different brightness is proposed. The proposed method has the advantage of switching low beam to high beam without human support. Thus, by using different brightness ranges provides better clarity of road without glare. The proposed method helps to improve visualization road clearly even without disturbance of opposite vehicle light. The utilization to headlights on cars has involved a split the difference between giving sufficient light to drivers to see the street ahead and keeping away from the exorbitant light that produces glare. This framework disposes of human mistake from the situation, which thus permits the driver to zero in on securely exploring the street rather than physically changing fog light settings. Innovation has carried changes to fog light, inside surfaces, and the thruway climate that straightforwardly lessen glare or by implication decrease the impact of glare on the driver. In future the idea of this venture will be utilized in auto vehicles and almost certainly it will be of extraordinary and generally embraced.

REFERENCES

- [1] Kher, S. Bajaj, P., Fuzzy control of head-light intensity of automobiles: design approach, 37th SICE international conference pp. 1047- 1050, July 1998.
- [2] Bajaj, P., and Kher, S., "Smart Control of Headlight Intensity of Automobiles for Improved Night Vision," 38th SICE Annual Conference, vol. A247, pp. 1187- 1192, July 1999.
- [3] Muralikrishnan, R., "Automatic Headlight Dimmer A Prototype for Vehicles", International Journal of Research in Engineering and Technology, Vol.3, Issue: 02, Feb-2014, pp. 85-90



- [4] AslamMusthafa R, Bala Krishnan T, SeethaRaman N, Shankar M, Swathi R, "AutomaticHeadlight Beam Controller" Special IssuePublished in International Journal of Trend inResearch and Development (IJTRD) 15th March2017.
- [5] C. Guttman, High Intensity Headlights couldcause road accidents by dazzling oncomingdrivers, Eurotimes, April 2003.
- [6] J. Fazzalero, Limitations on Headlightbrightness, OLD research report, Br. J.Ophthalmol, 87(1), 2003, pp.113-117.
- [7] Lighting the future Standard and HighPerformance Automotive Halogen Bulbs – Hella.
- [8] Prashanth K P, Kishen Padiyar, Naveen Kumar PH, K Santhosh Kumar, "Road Accident Systeming Drunken Sensing Technique", InternationalJournal of Engineering Research andTechnology, Vol. 3- Issue 10 (October 2014).
- [9] N Keerthi, Venkat Ajay Kumar, Deepthi, "Design and Fabrication of Solar PoweredAutomatic Headlight Brightness Controller",Managers Journal on Mechanical EngineeringVolume-5 Issue-2 FebruaryApril2015.
- [10] Yang, Jianhao, et al. "The Design of VehicleHeadlights Switching System Based on Support Vector Machine (SVM)." 2018 IEEE 3rdAdvanced In



SJIF: 8.423



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INTERNATIONAL CENTRE



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 **9940 572 462**  **6381 907 438**  **ijirset@gmail.com**



www.ijirset.com

Scan to save the contact details