Project - "IR CONTROLLED VEHICLE HEADLAMPS"

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Achievements –

- Dr Pradeep P Thevanoor Innovation Awards 2015 (Shortlisted to finals)
- FugenXpo 2016 (Shortlisted to finals)
- KPIT Sparkle 2015(Shortlisted till Prototyping Phase2)

This project uses IR LEDs and sensors to switch the lights. It is because IR is cheap and much reliable in long range. The IR transmitter is made using IR LEDs, IC and resistors. It generates a 38 KHz IR radiation. The radiation starts producing when the light is switched ON. This IR radiation is transmitted and the receiver on the vehicle which is coming opposite with high beam picks up the radiation and the light in it is automatically dimmed. When the vehicle passes by, the bright bulb of this vehicle get switched back to ON. The IR receiver when receiving signal switches the bright bulb to dim bulb. We are switching between the light modes with IR radiation as a actuating signal.

The switching is controlled by our smart AIMEE (Alternation using Infrared Module with Emission as an Extension) control. AIMEE control can effectively switch between the modes by judging the distance between the vehicles and switching between the modes and automatically turning back the bright lights after the passage of the vehicle..

The AIMEE module which we created acts as a brain for the lights to switch between the modes. We are planning to make to versions AIMEE(BrainBox) and AIMEE(Integrated)

The AIMEE (BrainBox) is a box with a connector port. The box contains all the circuits. This box is useful to current vehicles. The lights and switches existing in the current vehicle can be wired according to the pin outs of AIMEE module and plugged into it. The AIMEE box acts as a brain in governing the switching between the lights

The AIMEE(Integrated) is a version of our own headlights which is already been built with a inbuilt AIMEE control system. They can buy it as a whole and replace the existing headlights with our AIMEE(Integrated) headlights. This can be implemented to upcoming vehicles.

This project will be most helpful for all night riders. As we are all familiar with the difficulty of being hit with high beam right on the face. This will provide an ideal solution to those who do not obey the rules of dimming the light when a vehicle comes opposite. This idea is purely new. There is no such a device for this problem in existence. This will be of maximum benefit to all vehicle. This device can be fixed to current vehicle or Upcoming. It can be fixed to both two wheelers and four wheelers. Manual switching of dim and bright light can be avoided using this automatic system. The AIMEE module and transmitter unit as fixed to every headlight set. This project will be a great solution for current headlight problems. This device will be made available and compulsory for all vehicles. This device can be easily

populated on every vehicle. The vehicles which are going to be made in the future can also use this technology directly to their headlight system so as to increase the safety of the individual riding the vehicle and also this device can compensate human negligence for switching between light modes. After implementing this technology there should be lesser accidents and more comfortable night driving. This should be implemented on Bikes, Scooters, Cars, vans, lorries, buses etc to gain the complete advantage of our device. This is the cheapest and most reliable way to solve the problem of headlight dimming easily and effectively. The ic used in the circuit is the common 555 ic and a tsop ic. Both are very cheap but provides maximum results. There is no microcontroller or any complicated devices in our device. It accepts the IR radiations and command the headlight to turn off and dim light to turn on. As the driver passes by the light gets back to bright. This device can work well even in rainy conditions. There is no more need to worry about others focusing their ultra bright light to your face because with this device we can easily control the headlight of the opposite driver.