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(54) Title of the invention : ENHANCED VISIBILITY FOR OPPOSITE VEHICLE DRIVERS ON SINGLE-LANE ROADS AT NIGHT WITH DIM AND DIP MECHANISM AND INTEGRATED SIDE LIGHTING SYSTEM

<p>(51) International classification :B60R0001080000, G06Q0030060000, E01F0015040000, B60Q0001076000, H02J0003180000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant :  <b>1)Madhukeshwara N</b>  Address of Applicant :103, Nayanika primerose, AM 20th Cross, Vidyanagar Last Bus Stop DAVANAGERE, KARNATAKA 577005 -----  <b>2)Danappa G T</b>  <b>3)Rajashekhhar U</b>  <b>4)Manjunatha H</b>  <b>5)Yogeeendra R Holebagilu</b>  <b>6)K Rajesh</b>  <b>7)Mujeebulla Khan Guttal</b>  <b>8)M G Anantha Prasad</b>  Name of Applicant : NA  Address of Applicant : NA  (72)Name of Inventor :  <b>1)Madhukeshwara N</b>  Address of Applicant :103, Nayanika primerose, AM 20th Cross, Vidyanagar Last Bus Stop DAVANAGERE, KARNATAKA 577005 -----  <b>2)Danappa G T</b>  Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Govt. Engineering College, Huvina Hadagali- 583219, Vijayanagara Dist., Karnataka -----  <b>3)Rajashekhhar U</b>  Address of Applicant :Assistant Professor &amp; Head, Department of Electronics and Communication Engineering, Govt. Engineering College, Huvina Hadagali- 583219, Vijayanagara Dist., Karnataka -----  <b>4)Manjunatha H</b>  Address of Applicant :Assistant Professor, Department of Civil Engineering, Govt. Engineering College, Huvina Hadagali- 583219, Vijayanagara Dist., Karnataka -----  <b>5)Yogeeendra R Holebagilu</b>  Address of Applicant :Assistant Professor, Department of Civil Engineering, Govt. Engineering College, Huvina Hadagali- 583219, Vijayanagara Dist., Karnataka -----  <b>6)K Rajesh</b>  Address of Applicant :Associate Professor and Head Department of Mechanical Engineering, STJ Institute of Technology, Ranebennur- 581 115, Haveri Dist., Karnataka -----  <b>7)Mujeebulla Khan Guttal</b>  Address of Applicant :Associate Professor Department of Mechanical Engineering, STJ Institute of Technology, Ranebennur- 581 115, Haveri Dist., Karnataka -----  <b>8)M G Anantha Prasad</b>  Address of Applicant :Chief Executive Officer, AIC-Jyothy Institute of Technology Foundation, Bengaluru-560082, Karnataka -----</p>
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(57) Abstract :

The automatic headlamp dipper or dimmer circuit unveiled in this patent is not merely a technical innovation but a testament to meticulous engineering aimed at fundamentally transforming road safety paradigms. By seamlessly adjusting headlamp intensity in response to dynamic ambient conditions, this circuit emerges as a beacon of safety, prioritizing both driver visibility and the mitigation of glare to foster safer driving environments. Employing a sophisticated amalgamation of electronic components and comparator mechanisms, this circuit embodies the pinnacle of innovation, efficiency, and reliability in vehicular safety technologies. Its design intricately integrates a variety of key components, including resistors R1 (1K) and P1 (10K), a light-dependent resistor (LDR) boasting a resistance range of 10K to 50K, a meticulously chosen transistor T1 (BC547), a diode D1 (1N4007), and a relay featuring a coil resistance of 400 Ohms. Operating with precision and unwavering responsiveness, the circuit orchestrates a symphony of real-time adjustments, continuously monitoring ambient light levels with the LDR acting as its vigilant sentinel. Any fluctuations in illumination are swiftly detected, prompting the LDR to meticulously modulate its resistance level to align with prevailing conditions. This nuanced data is then subjected to rigorous scrutiny against a preset reference level established by potentiometer P1, facilitated by the discerning comparator action of transistor T1. Upon identifying a significant reduction in LDR resistance indicative of dimming conditions, T1 seamlessly transitions to a conducting state, activating the relay coil with consummate efficiency. This pivotal relay response triggers a momentous switching action, dynamically adjusting headlamp settings with unparalleled precision to ensure optimal visibility while diligently minimizing any potential glare-related distractions. With an unwavering commitment to efficiency, reliability, and innovation, the circuit epitomizes a harmonious convergence of cutting-edge technology and pragmatic application. Its judicious design and meticulous implementation offer not just a technical solution but a tangible pathway towards addressing the pressing challenge of glare-related accidents on our roads. Through its dynamic adjustment capabilities and unwaveringly precise control mechanisms, the circuit heralds a new era in automotive safety technology, poised to spearhead safer, more secure driving experiences for drivers and pedestrians alike, thereby reshaping the landscape of road safety for generations to come.

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