

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
"Jnana Sangama" Belagavi – 590 018



**PROJECT REPORT ON**

**"VEHICLE TO VEHICLE COMMUNICATION  
USING LI-FI TECHNOLOGY"**

Submitted in partial fulfillment of the requirements for the award of degree  
**BACHELOR OF ENGINEERING**

**IN  
ELECTRONICS & COMMUNICATION ENGINEERING**

**Submitted By**

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**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**

**A+, ACCREDITED BY NACC & NBA (ECE & CSE)**

**MOODBIDRI – 574 225.**  
**2022-2023**

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MOODBIDRI - 574 225

(Affiliated to VTU, BELAGAVI)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

## CERTIFICATE

*Certified that the project work entitled "VEHICLE TO VEHICLE COMMUNICATION USING LI-FI TECHNOLOGY" is a bona fide work carried out by*

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in partial fulfillment for the award of BACHELOR OF ENGINEERING in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2022-2023. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.



Signature of the Guide

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## ABSTRACT

Vehicle-to-vehicle (V2V) communication plays a pivotal role in enhancing road safety, traffic management, and overall transportation efficiency. Traditional wireless communication technologies, such as radio frequency (RF)-based systems, have been widely adopted for V2V communication. However, these RF-based systems face challenges related to limited bandwidth, signal interference, and security vulnerabilities. In recent years, Li-Fi (Light Fidelity) technology has emerged as a promising alternative for V2V communication, leveraging visible light communication (VLC) to transmit data between vehicles. This abstract presents an overview of V2V communication using Li-Fi technology, highlighting its advantages, advancements, and potential applications. Li-Fi utilizes light-emitting diodes (LEDs) as transmitters to encode and transmit data through modulated light signals. With its high bandwidth and unlicensed spectrum utilization, Li-Fi offers several benefits over RF-based systems, including increased data rates, reduced latency, and improved security. In conclusion, V2V communication using Li-Fi technology represents a promising solution for addressing the limitations of traditional RF-based systems. With its high-speed, low-latency, and secure data transmission capabilities, Li-Fi has the potential to revolutionize V2V communication and enable a safer and more efficient transportation ecosystem. However, further research and development efforts are required to overcome technical challenges and ensure seamless integration with existing vehicular communication infrastructure.