

# ALCOHOL DETECTION WITH AUTO ENGINE CUTOFF USING ARDUINO

## **Abstract:**

Driving under the influence of alcohol poses a significant threat to road safety, leading to numerous accidents and fatalities worldwide. This research introduces an innovative solution aimed at mitigating this risk by implementing an Alcohol Detection System (ADS) coupled with an Auto Engine Cutoff (AEC) mechanism. The proposed system integrates advanced sensor technologies, data processing algorithms, and vehicular control mechanisms to create a comprehensive approach to prevent intoxicated individuals from operating a vehicle. The Alcohol Detection System utilizes state-of-the-art breathalyzer technology capable of accurately measuring blood alcohol content (BAC) in real-time. These measurements are processed through a robust onboard computer system, which employs machine learning algorithms to ensure the reliability and precision of the results. The system's seamless integration with the vehicle's electronic control unit (ECU) enables swift and automatic responses to detected alcohol levels exceeding legal limits. Upon identifying an elevated BAC level in the driver, the Auto Engine Cutoff mechanism is activated, ensuring the immediate and safe immobilization of the vehicle. This proactive intervention not only prevents the intoxicated driver from continuing their journey but also contributes to minimizing the risk of potential accidents associated with impaired driving. The goal is to automatically detect intoxicated driving and restrict vehicle control to reduce accidents from drunk driving. The system is designed using an Arduino controller connected to an alcohol sensor, LCD screen, and motor to demonstrate locking the wheels when alcohol is present in the driver's breath.

