## **Abstract:**

Smoke detection systems stand as critical components in the realm of fire safety, offering a pivotal role in early fire detection and subsequent mitigation. This study introduces a novel development, the Smoke Detection and Alert System, harnessing the capabilities of Arduino kits and GSM modules. By amalgamating MQ-2 Smoke Sensors, Arduino Nano microcontrollers, and GSM modules, this system unlocks real-time smoke detection and remote alerting potentials. Through meticulous testing and exhaustive experimentation, the system has consistently demonstrated its mettle by accurately discerning smoke particles and swiftly notifying predefined recipients through SMS alerts. This innovation presents a cost-effective and scalable solution, poised to elevate fire safety, particularly in the domains of residential and small-scale commercial settings. The seamless integration of Arduino-based microcontrollers and GSM communication channels paves the way for efficient smoke detection, ensuring timely responses and substantiating its role as a stalwart in disaster prevention measures.