# FIRE FIGHTING ROBOT

## ABSTRACT

The main goal of this project is to develop a robotic vehicle which is used to find and fight fire remotely through RF application in an event of any major fire hazard particularly in industries. Major fire accidents do occur in industries like nuclear power plants, petroleum refineries, gas tanks, chemical factories and other large-scale fire industries resulting in quite serious consequences. Thousands of people have lost their lives in such mishaps. Therefore, this project is enhanced to control fire through a robotic vehicle With the advancement in the field of Robotics, human intervention is becoming less everyday and robots are used widely for purpose of safety. In our day to day life fire accidents are very common and sometime it becomes very difficult for fireman to save human life. In such case fire fighting robot comes in picture. The fire extinguishing robotic vehicle can be controlled wirelessly through RF communication. The vehicle is controlled through connected remote key input. The language input allows a user to interact with the robot which is familiar to most of the people. The medium of interaction between humans and computers is on the processing of speech. The proposed vehicle has a water jet spray which is capable of sprinkling water. The sprinkler can be moved towards the required direction. The advent of new high-speed technology provided realistic opportunity for new robot controls and realization of new methods of control theory. This technical improvement together with the need for high performance robots created faster, more accurate and more intelligent robots using new robots control devices, new drivers and advanced control algorithms. This project describes a new economical solution of robot control systems. The presented robot control system can be used for different sophisticated robotic applications. The controlling devices of the whole system are Microcontrollers, wireless transceiver modules, water jet spray, DC motors and buzzer are interfaced to Microcontroller. When the user fed the commands through a remote controlled device, the microcontroller interfaced to it reads the command and sends relevant data of that command wirelessly using transceiver module. This data is received by the transceiver module

on the robot and feds it to microcontroller which acts accordingly on motors and pump. The complete system consists of two subsystems transmitter section and the receiver section. This project controls left, right, forward and backward movement of robot wirelessly within 500m range using 433 MHz RF frequency. At the receiver side of robot PIC microcontroller is also used. The microcontroller takes command wirelessly transmitted by a RF transmitter. The need for a device that can detect and extinguish a fire on its own is long past due. Many house fires originate when someone is either sleeping or not home. With the invention of such a device, people and property can be saved at a much higher rate with relatively minimal damage caused by the fire. Our main objective was to design and build a prototype system that could autonomously detect and extinguish fire.