Title :Prevention Of Coal Mine Disasters Using Mobile Robots

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Abstract

Coal mine disaster is a common occurrence in mines after which rescue operations are immediately needed which is a risky one. The disaster results in increased level of harmful gases like CO and CO2 resulting in decreased O2 level and high temperature. The objective is to detect the dangerous gases in the surrounding environment. Moreover the explosion might recur, making direct human intervention impossible inside the tunnel for rescue operation. So the main objective of this robot is to prevent human and material loss after mine explosion.The mobile robot for mine disaster surveillance is designed and the robot looks as shown in fig with its camera and other components attached to it. A 12V/ 5A rechargeable battery is used to run the robot. The robot would run and it moved well on debris and over rough terrains and the video was transmitted with much clarity. The sensors are tested for their performance and to conduct the test, a wick or any other source of smoke is brought near to the MQ 7 and MQ 6 sensor. This prototype robot has its safe values of CO and CO2 set at 10 ppm and 60 ppm. The set point for temperature is 40 degree Celsius. Once the measured value goes beyond these set points, a window will pop out in the CPU showing the parameters level has exceeded.

Photos