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Smart Helmet for Coal Mining

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Abstract: *The Coal Mining Helmet designed on this paper aims to offer protection to miners through alerting them. All the elements may be referred to only if the person is carrying the helmet. The output from the helmet module continues updating every instance i.e., actual time information is been updated to the cloud. These wearable gadgets get to share their information or retrieve the information thru different source through using internet of things (IOT). Alerts are sent to the miner and the supervisor if any hazard is detected. Ubiquitous computing and wearable computer systems have contributed extremely to the evolution of wearable gadgets. Thus, this wearable device consists of the diverse sensors, alerting mechanism and communication system to broaden and enhance protection of the miner. The hardware incorporates of information collection, data processing and data communication sections. Sensors employed a) Temperature and humidity sensor (DHT11): In mines, the extent of temperature and humidity will become excessive at instances and prove to be fatal to the miner. The liberation of those gases should result in respiratory trouble to the person within the mines and could result in choking. If one or extra of these portions exceed the threshold limit, an alert is sent to the miner as well as the base Authorizer. The data collection or measuring of the parameters is achieved using WSN technology. WSN technology is a network of sensors, in which each of the sensors has unique parameters to sense but carry out collectively as part of the system. The level of temperature and humidity is understood to the miner through showing it on an OLED (Organic LED) and for the gas a threshold is set and a buzzer alert is given if it's far past the threshold.*

Keywords: OLED (organic LED), Humidity sensor (DH11), MQ2, Arduino

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