LITERATURE SURVEY

Hazardous Area Monitoring for Industrial Plant powered by IoT

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S.No	TITLE	AUTHOR & YEAR	ABOUT THE PAPER	RESULT
1.	On the evaluation of DHT22 temperature sensor for IoT Application	Yasser Asrul Ahmad, Teddy Surya Gunawan, Hasmah Mansor, Belal Ahmed Hamida, Adam Fikri Hishamudin, Fatchul Arifin 2021	The IoT temperature monitoring system utilizing the DHT22 sensor provides accurate measurement up to 0.10C but a slower response in detecting temperature change	It is observed that the DHT22 sensor with Raspberry Pi configuration in an IoT configuration provides accurate temperature measurement up to 0.1 deg Celsius.
2.	Design and Implementation of IoT System for Aeroponic Chamber Temperature Monitering	Charisma Aulia Jamhari, Wahyu Kunto Wibowo, Aulia Rahma Annisa, Teuku Muhammad Roffi 2020	This work presents a design and implementation of a lab-scale aeroponic system that employs the Internet of Things (IoT) for online and automated monitoring capability. . The temperature in this chamber was carefully monitored by using the DHT-11 sensor connected to the internet through the Wemos-D1-mini integrated microprocessor and Wifi module.	The system performed real-time, online monitoring of key parameters, i.e. humidity, temperature, and light intensity. Without any control, the root chamber temperature reached 32.9 °C.
3.	An IoT-based Temperature Monitoring System for Underground Cable Tunnels	Meng-Fu Chen1 , Huan-Chieh Chiu1 , Kai-Sheng Tseng1 , Yu-Cheng Yang1 , Cheng-Ying Chou1 , Joe-Air Jiang 2019	This paper proposes an IoT-based underground tunnel temperature monitoring system in which the wireless transmission method used is after the experiment. Temperature sensing nodes are placed in an underground tunnel, and then a gateway collects sensed data and sends them to a database.	Since there is no stable power source in the underground tunnel, the temperature measurement node in the system can only use the battery as the sole source of power. Therefore, node energy consumption is the key to the long-term operation of the system.
4.	New alternatives to manage hot surface ignition temperatures for trace heating in explosive atmospheres	Dan Caouette,Jim Parks Jr,Matt Aurini 2017	This paper will present alyernative methods to deal withimproved heater constructions and controller algorithms.Used with engineering design software that can accurately predict heatersurface temperatures, these options provide the design engineer with improved flexibility in creating solutions.	Design of THS used in hazardous areas can be a major challenge, when maintaining temperatures approaching the temperature classification limit. The resulting benefits include fewer trace heater

				passes per unit length of pipe, lower installation and maintenance costs, and a better match of owe output needs to the system heat loss. In many causes, the reduction in trace heater length can be as much as 50% over traditional design approaches.
5.	MQTT Based Environment Monitoring In Factories for Employee Safety	Ravi Kishore Kodali and Aditya Valdas 2017	We will be able to monitor critical safety parameters of the working environment in these factories so that we are well-aware of the safety situation and the possibility of occurence of any mishap. For the design of this system, we use an ESP8266 Wi-Fi chip enabled microcontroller NodeMCU. To this are connected three sensors - one to monitor temperature and humidity (DHT sensor), an ultrasonic sensor (HC-04) and a smoke sensor(MQ2 sensor).	It can be said that in the years to come there will be a massive improvement in the safety standards in hazardous factories so that employees can work peacefully without the risk of loss of life hanging over their heads.
6.	Demonstrator for online measurement of combustion gases NO, NO2 and SO2	Martin Degner, Hartmut Ewald 2017	The demonstrator shows a wide concentration dynamic range of some 1000 ppm and a resolution of below 1 ppm for all three gases. Such a sensor system can be used for online emission monitoring of combustion engines in transportation area as well as in stationary industry application.	This work demonstrate the functionality of catalytic converters and the actual emission problems of modern Diesel- as well as Otto-engines. The lack of a compact and cost effective sensor for the individual detection of NO and NO2 for monitoring and well-directed engine control application.
7.	Fabrication of a Miniaturized Room Temperature Ionic Liquid	Xiaoyi Mu, Student Member, IEEE, †Zhe Wang, †Min Guo, †Xiangqun Zeng, Andrew J. Mason	This paper introduces a microfabrication process that enables miniaturized, rapid response, gas sensors to be realized using RTIL interfaces on a permeable membrane	The electrode structure occupies a 2mm×2mm sensing area, only 8% of the area in the macro-scale device. WE and

	Gas Sensor for Human Health and Safety Monitoring	2012	substrate with planar microfabricated electrodes. An RTIL sensor with a 2mm×2mm sensing area is described, and measured responses to methane, a dangerous residential and occupational gas, and sulfur dioxide, a common environmental pollutant.	CE were interdigitated for impedance measurement with a 200 µm width and a 100µm gap, and an RE was included to improve electrochemical stability
8.	Evaluation of Routing Protocols used in Wireless Sensor Networks Monitoring Temperature in Composting Heaps	Velavarthy Neehaarika, Sanampudi Sindhura 2011	We provide a survey of the performances of basic routing protocols namely AODV, DSDV, DSR when employed in the aforementioned scenario having 85 sensor nodes. The above mentioned routing protocols are tested for their efficiency, optimal energy use and reliability using Network Simulator-2 (NS2).	The energy of a nodes decays at a slower rate in case of DSDV when compared to the other two protocols (AODV, DSR). DSDV also shows better Delivery Ratio compared to the other protocols tested.