LITERATURE SURVEY
FOR
IOT BASED INDUSTRY MONITORING SYSTEMS

SI.NO	TITLE	AUTHORS	ABSTRACT	LIMITATIONS
1	Design and Validation of a Multifunctional Android-Based Smart Home Control and Monitoring System	LUN-DE LIAO (Member, IEEE), YUHLING WANG YUNG-CHUNG TSAO, I-JAN WANG, DE-FU JHANG, TSUNG-SHENG CHU, CHIA-HUI TSAO, CHIH-NING TSAI, SHENG-FU CHEN, CHIUNG-CHENG CHUANG, AND TZONG-RONG GER	Users often need to control and monitor the environmental variables of their homes, even when they are not at home. In this paper, we present a multifunctional, low-cost, and flexible system for smart home control and environmental monitoring. This system employs an embedded micro web server based on an Arduino Yún microcontroller with Internet connectivity that allows remote device control. The proposed system can be controlled via the Internet through an Android-based mobile app. To guarantee access regardless of Internet availability, the proposed system can also be controlled via standalone manual operation using a touch display. The proposed system transmits sensor data to a cloud platform and can receive commands from the server, allowing many devices to be automatically controlled. To demonstrate the feasibility and effectiveness of this system, devices such as light switches, power plugs, and various sensors, including temperature, gas, 2.5-μm particulate matter (PM2.5) and motion sensors, were integrated into a prototype of the proposed home control system. Finally, we implemented the prototype in a model home to validate the flexibility, scalability,	Bounded only to mobile application and there is no web application or SMS for fast notification as we may not have our Internet connections on always.

2	A Hazardous Area Personal Monitoring System for Operators in Gas Depots and Storage Tanks	Elia Landi, Lorenzo Parri, Ada Fort, Marco Mugnaini, Valerio Vignoli, Dinesh Tamang, And Marco Tani	This work describes a smart monitoring system for the detection of flammable gas residues, toxic gases, and reduced oxygen concentrations. The proposed system aims at reducing the risk of fires and explosions, thus increasing the safety of workers engaged in maintenance or inspection of gas storages. The monitoring system is based on compact battery-powered wearable sensor nodes containing sensors for LPG flammable compounds, toxic gases, and oxygen. The designed system can also increase plants safety by incorporating an intrusion detection system, which prevents unauthorized access to safety-critical areas to prevent accidents. The sensor nodes transmit data through a LoRa low power radio channel to a remote server whereas they allow for the identification of the operators for the access to restricted areas exploiting a Bluetooth Low Energy	Catalytic sensors require a relative high amount of power to operate

3	Potential and Limits of IoT for Hazardous Job in Process Industries	Paolo Bragattoa , Luca Faramondib, Francesco Faillab , and Maria Grazia Gnonic	In process industries, including refineries, petrochemical plants, air fractioning plants, Oil and gas depots, there are many hazards for workers (both for employees and contractors). Occupational Hazards include thermal extremes, high concentration of toxic or flammable gas and low concentration of oxygen. These hazards are usually controlled by means of procedures, operating instruction, gas sensors, alarms, personal and collective protection equipment. Whilst a few hazards are well known and localized inside the plants, for instance the classified confined spaces or the classified ATEX areas, in other cases, hazards are associated to a high uncertainty, hence, it's difficult to find a trade-off between the precautionary safety requirements and the work practicality and easiness. The worker, moreover, must be protected, when the hazard is present but cannot be overwhelmed by heavy protection or oversize solution. The potential of IoT enabling technologies, including smart sensoring and human-machine communication, have a huge potential for reducing the uncertainties in hazard detection and promoting a more dynamic approach. The main idea is the adoption of a solution based on wearable and fixed sensors used to dynamically monitoring the environments in order to provide, in real time, information about situation context in order to help the workers to better estimate the actual level of risk. The use of IoT poses new problems, including web security, privacy, workers' union acceptance. The implementation of IoT solution requires a special attention to these details, in order to avoid defeats in innovation projects. The paper illustrates the preliminary results developed inside the INAIL Bric project SmartBench related to the use of IoT and RFID beacons to provide information in real time about	hazards are associated to a high uncertainty, hence, it's difficult to find a trade-off between the precautionary safety requirements and the work practicality and easiness.

4	IoT Based Smart Emergency Response System for Fire Hazards	Ravi Kishore Kodali and Subbachary Yerroju	The Internet of Things pertains to connecting currently unconnected things and people. It is the new era in transforming the existed systems to amend the cost effective quality of services for the society. To support Smart city vision, Urban IoT design plans exploit added value services for citizens as well as administration of the city with the most advanced communication technologies. To make emergency response real time, IoT enhances the way first responders and provides emergency managers with the necessary up-to-date information and communication to make use those assets. IoT mitigates many of the challenges to emergency response including present problems like a weak communication network and information lag. In this paper it is proposed that an emergency response system for fire hazards is designed by using IoT standardized structure. To implement this proposed scheme a low-cost Espressif wi-fi module ESP-32, Flame detection sensor, Smoke detection sensor (MQ-5), Flammable gas detection sensor and one GPS module are used. The sensors detects the hazard and alerts the local emergency rescue organizations like fire departments and police by sending the hazard location to the cloud-service through which all are connected. The overall network utilizes a light weighted data oriented publish-subscribe message protocol MQTT services for fast and reliable communication. Thus, an intelligent integrated system is designed	In providing a quality public safety and security services it is very important to adopt leveraged data driven emergency response systems with urban IoT design standards.