VIT Vidyalankar Institute of Technology ACCREDITED A+ BY NAAC	**Department of Information Technology**
Semester	B.E. Semester VIII – INFT
Subject	Internet Of Everything
Lab Teacher	Prof. Rasika Ransing
Laboratory	Internet Of Everything

Student Name	Pratik Poojari
Roll Number	18101B0058
Topic Name	SMART WATER QUALITY MONITORING SYSTEM

Assignment	Technical Paper Reading

Pollution of water is one of the main threats in recent times as drinking water is getting contaminated and polluted. The polluted water can cause various diseases to humans and animals, which in turn affects the life cycle of the ecosystem. If water pollution is detected in an early stage, suitable measures can be taken and critical situations can be avoided. To make certain the supply of pure water, the quality of the water should be examined in real-time. Smart solutions for monitoring of water pollution are getting more and more significant these days with innovation in sensors, communication, and Internet of Things (IoT) technology and Internet of Everything(IOE).

In all papers read they give a detailed review of the latest works that were implemented in the arena of smart water pollution monitoring systems is presented. The papers propose a cost effective and efficient IoE based smart water quality monitoring system which monitors the quality parameters uninterruptedly. The developed model is tested with water samples and the parameters are transmitted to the cloud server for further action.

Related works

Pasika and Gandla proposed a monitoring system which consists of a number of sensors used to measure several quality parameters like turbidity, pH value, water level in the tank, dampness of the adjoining environment and temperature of the water. The sensors are interfaced with the Microcontroller Unit (MCU) and additional processing is executed by the Personal Computer (PC).
The acquired data will be directed to the cloud by means of (IoE) based ThinkSpeak application for monitoring the quality of the water under test. As a future directive, work

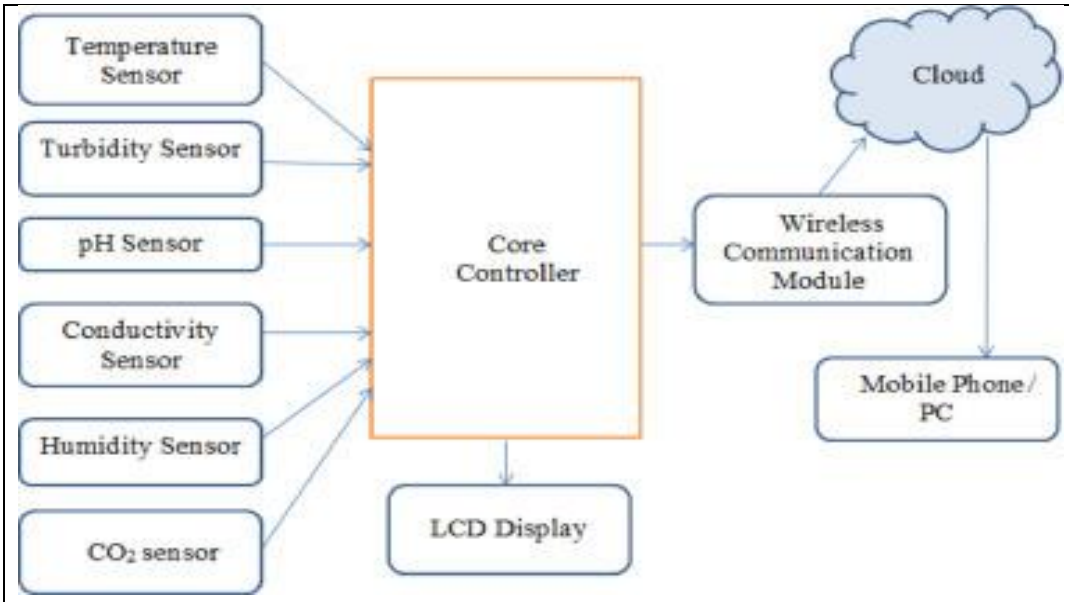
should be extended for analyzing some other parameters such as nitrates, electrical conductivity, dissolved oxygen in the water and free residual chlorine.

Mukta developed an IoT based Smart Water Quality Monitoring (SWQM) system which helps in incessant measurement of quality of water on the basis of four different parameters of water quality i.e., pH, temperature, turbidity and electric conductivity. Four different sensors are coupled to Arduino Uno in order to sense the quality parameters.

Konde and Deosarkar proposed a method for developing a Smart Water Quality Monitoring (SWQM) system with reconfigurable sensor interface device using IoT environment. Sensors, Field Programmable Gate Array (FPGA) board, Zigbee based wireless communication module were used in the proposed model. Six different water quality parameters like turbidity, pH, humidity, water level, water temperature and carbon dioxide (CO_2) on the surface of water were considered in real-time.

Amruta and Satish proposed a Solar Powered Water Quality Monitoring system by employing wireless Sensor Network. Underwater Wireless Sensor Network (UWSN) is the elementary component in the water quality monitoring using wireless sensor network (WSN) technology which is powered by photovoltaic panels or solar panel.

In general water quality monitoring system consists of various sensors such a pH sensor, turbidity sensors, temperature sensors, conductivity sensors, humidity sensors and many other sensors. shows the general block diagram of smart water quality monitoring system. As shown in the figure, core controller forms the heart of the system. All the sensors are connected a core controller and this controller controls the operation, gets data from sensors, and compares it with that of the standard values and sends the values to the concerned end user or authorities through wireless modules .



References

1) S. Pasika, S.T. Gandla

Smart water quality monitoring system with cost-effective using IoT
Heliyon, 6 (7) (2020)

2) M. Mukta, S. Islam, S.D. Barman, A.W. Reza, M.S. Hossain Khan

"Iot based smart water quality monitoring system
Proceedings of the IEEE 4th International Conference on Computer and Communication Systems (ICCCS) (2019)

3) S. Konde, S. Deosarkar

IOT based water quality monitoring system
Proceedings of the 2nd International Conference on Communication & Information Processing (ICCIP) (2020)

4) M.K. Amruta, M.T. Satish

Solar powered water quality monitoring system using wireless sensor network
Proceedings of the International Mutli-Conference on Automation, Computing, Communication, Control and Compressed Sensing

5) T. Sugapriyaa, S. Rakshaya, K. Ramyadevi, M. Ramya, P.G. Rashmi

Smart water quality monitoring system for real time applications
Int. J. Pure Appl. Math

6)K.A. Unnikrishna Menon, D. P., M.V. Ramesh

Wireless sensor network for river water quality monitoring in India
Proceedings of the Third International Conference on Computing, Communication and Networking Technologies (ICCCNT'12) (2012), pp. 1-7,