**DEPARTMENT OF ELECTRONICS AND COMMUNICATION**

**ENGINEERING**

**IBM – LITERATURE SURVEY**

**PROJECT TITLE**

**Real-Time River Water Quality Monitoring and Control System**

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| **S.no** | **Title of Paper** | **Advantages** | **Disadvantages** | **Technology used** |
| --- | --- | --- | --- | --- |
| 1 | Internet of things enabled real time water  quality monitoring system | Flexibility, low carbon emission and low power consumption  are the advantages of the method proposed in the paper. | Water with a pH of 11 or higher can cause irritation to the eyes, skin and mucous membrane. | Wireless technology is used for communication between sensor to controller and from  controller to data storage cloud.  Sensors are connected to the controller, either directly using UART protocol or  remotely using Zigbee protocol. |
| **2** | A system for monitoring water quality in a  large aquatic area using wireless sensor  network technology | This Wireless Sensor Network (WSN) is suitable for  monitoring physical and chemical water characteristics  in remote areas at lower cost and reduce manpower  Requirement. | Due to lack of technical know-how and a huge amount in the initial investment, water analyses are usually done through conventional procedures or by using portable testers. | The study  only used the simplest ZigBee setup (sensor nodes to  sink node) for less installation and operational complication. |
| **3** | Smart Water Monitoring System for Real-Time Water Quality and  Usage Monitoring. | The Smart water quality check meter is automatic  and does not require much human interference, thereby  reducing the errors. | Water supply to taps at urban homes and water sources available in more rural areas, is however, not necessarily safe for consumption. | Flow sensor, pH sensor,  conductivity sensor, Communal prepaid metering. |
| **4** | Water Quality Monitoring Systems based on Intelligent Agents | The development of WQWs is currently directed to the field of Intelligent Agents,  for Intelligent Agents represent technology to create complex software systems. | Water Quality  Monitoring (WQM) are paramount due to different factors that affect water, such as each living creature needs water to live. | Sensor Networks,  Spectrometers  UV-VIS  TROPOS  methodology,  UML, FIPA,  JADE agent. |
| **5** | Literature Survey on Smart Water Quality  Monitoring System | ALARM is developed at  Victorian Centre for Aquatic Pollution Identification  and Management (CAPIM). The aim is to develop a  minimal cost, wireless water quality monitoring  system that monitors the water conditions  contiguously. | The system has been built by applying  image processing and auto-recognition of the gesture  of fish using fuzzy inference in water bodies. | The Raspberry Pi3 Model B is a wonderful platform that can be used to build automation systems. Clearly, the Raspberry Pi3 model B board is perfect when being used as a “hub” for automation systems, connecting to other open-source hardware parts. |
| **6** | Real-Time Water Quality Monitoring System | Monitoring of real time quality of Water from reserve tank  of house and colony makes use of PH, turbidity and  temperature sensor with Raspberry Pi and existing Cloud  system for data analytics. | The cost associated with false alarms is due to not being able to detect the signs. | The system can be  expanded to monitor hydrologic, air pollution, industrial  and agricultural production and so on. It has widespread  application and extension value. |
| **7** | IOT Based Real-Time River Water Quality Monitoring System | System that uses wireless sensor networks to continuously monitor river  water quality at remote locations with low power consumption, low cost and high detection accuracy. | Water quality monitoring in real time is becoming more difficult as a result of increasing water scarcity,  population growth, and other factors. | The use of wireless  communication technologies is becoming more common to help people with their personal and daily duties. |
| **8** | Water Quality Monitoring System Based on IOT | Monitoring of Turbidity, PH & Temperature of Water makes use of  water detection sensor with unique advantage and existing GSM network. | Turbidity is a measure of the cloudiness of water. Turbidity  has indicated the degree at which the water loses its transparency. | pH sensor, Turbidity sensor, Temperature sensor, Flow sensor,  Ardurino model, WI-FI module. |
| **9** | IoT Based Real-time River Water Quality Monitoring System | The main aim is to develop a system for continuous monitoring of river water quality at remote places using  wireless sensor networks with low power consumption, low-cost and high detection accuracy. | The  neural network will produce output to classify water quality as dangerous, be careful, and good. The classification  layer will run on top of Hadoop cluster . | The main components o  f Wireless Sensor Network (WSN) include a  microcontroller for processing the system, communication system for inter and intra node communication and several sensors. |
| **10** | The Real Time Monitoring of Water Quality in IoT  Environment | The online water monitoring technologies have made a  significant progress for source water surveillance and water  plant operation. The use of their technologies having high  cost associated with installation and calibration of a large  distributed array of monitoring sensors. | The use of their technologies having high  cost associated with installation and calibration of a large  distributed array of monitoring sensors. | Raspberry PI is used as a core  controller. The sensor data can be viewed on the internet  using cloud computing with a separate IP address. |