

LITERATURE SURVEY ON REAL-TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

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Water is the primary need of every living thing, with the availability of water for living things, it is very helpful for daily needs. River plays important roles in human life. For example, transportation and economic activities of the inhabitants. However, industrial, agricultural and domestic water is discarded into rivers directly in many developing countries, since drainage systems have not been completely constructed.

River water monitoring system is one of the efforts as a contribution to control the pollution. Web technology is used to monitor and simulate the river water quality, achieving the goal of controlling water environment conditions in real time dynamically.

| TITLE AND AUTHORS(S) | YEAR | TECHNIQUE | FINDINGS | PROS AND CONS |
|---|------|--------------------|---|---|
| A demonstration of wireless sensing for long term monitoring of water quality Fiona Regan, Antoin Lawlor Brendan O Flynn ¹ , J. Torres, | 2009 | INTERNET OF THINGS | A multi-sensor heterogeneous real-time water monitoring system. | Current monitoring status in Ireland and globally Issues relating to long-term monitoring Communication capabilities currently available and communication needs Data value collection |

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| R Martinez-Catala, C.Mathuna John Wallace. | | | | interpretation and reporting and Gaps in the area of water quality monitoring in Ireland |
| A Design of Radio-controlled Submarine Modification for River Water Quality Monitoring Sritrusta Sukaridhoto, Dadet Pramadihanto, Taufiqurrahman, Muhammad Alif, Andrie Yuwono*Polit eknik Elektronika Negeri Surabaya, | 2015 | INTERNET OF THINGS | Waterquality monitoring using radio-controlled submarine | The experiment results show that our ROV worked and able to move stably in river to collect information from water quality sensors. Our future works include the further improvement of sonar device and application to build 3d reconstruction of river and analysis of water pollution level. |
| River Water Quality Monitoring and Simulation based on WebGIS – Anhui Yinghe River as an Example Niu | 2016 | INTERNET OF THINGS | WebGIS technology is used to monitor the river water quality | It's applicable for WebGIS technology to be used in river environment. By Anhui Yinghe river practice, this theory was |

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| Maojing | | | | verified as reliable. Moreover, it can also be extended to lake, sea and other related areas, providing analysis research and decision making for water department. |
| Floating Robot Control System for Monitoring Water Quality Levels in Citarum River Muhammad Ary Murti Angga Rusdinar Ig. Prasetya Dwi Wibawa | 2019 | INTERNET OF THINGS | Floating robotic solution to monitor river water quality regularly | The robot control system can be done wirelessly, using the Bluetooth HC05 module.. The response of the moving average based on the number of sample values is calculated |
| Design of IoT-Based River Water Monitoring Robot Data Transmission Model Using Low Power Wide Area Network (LPWAN) Communication | 2019 | INTERNET OF THINGS | river water quality monitoring-system using LPWAN communicate on technology | Transmission range using LPWAN communication to connect nodes and gateway on river water surface for a maximum range of 500 m before |

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| Technology | | | | <p>experiencing signal loss, implementation of mesh network topology to make data being accepted by gateway by 100% success rate, implementation of JSON format to data with a maximum of 255 bytes data, use of MQTT technology to connect gateway to server using internet, implementation of local database to be able to save 2.6 MB data with 365 days, and reprocessing of data to be viewed on website display.</p> |
| <p>Rahayu Dwi Lestari Angga Rusdinar Muhammad Ary Murti</p> | | | | |