

# IOT Based Drinking Water Quality and TDS Monitoring using ESP 32

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**Abstract:** *The increasing importance of water quality monitoring in ensuring safe and sustainable water resources has led to the development of innovative technologies. This paper presents an Internet of Things (IoT) based water quality monitoring system designed to address the challenges associated with traditional manual monitoring methods. The proposed system leverages IoT technologies to provide real-time monitoring and analysis of key water quality parameters, including temperature, pH, dissolved oxygen, turbidity, and conductivity. The proposed IoT-based water quality monitoring system offers several advantages over traditional methods, including reduced manual effort, improved accuracy, and enhanced real-time monitoring capabilities. It enables early detection of water quality issues, leading to timely interventions to protect public health and optimize water resource management. The system has the potential to be implemented on a large scale, benefiting both urban and rural areas, and contributing to the overall sustainability of water resources.*

**Keywords:** Internet of Things, pH sensor, Turbidity sensor, Temperature sensor, ESP32, WI-FI module

## REFERENCES

- [1] Nikhil Kedia, Water Quality Monitoring for Rural Areas- A Sensor Cloud Based Economical Project, in 1st International Conference on Next Generation Computing Technologies (NGCT-2015) Dehradun, India, 4-5 September 2015. 978-1-4673-6809-4/15/\$31.00 ©2015 IEEE
- [2] Jayti Bhatt, JigneshPatoliya, Iot Based Water Quality Monitoring System, IRFIC, 21feb,2016.
- [3] Michal lom, ondrejpriby&miroslavsvitek, Internet 4.0 as a part of smart cities, 978-1-5090-1116-2/16/\$31.00 ©2016 IEEE
- [4] Zhanwei Sun, Chi Harold Liu, ChatschikBisdikia\_, Joel W. Branch and Bo Yang, 2012 9th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks
- [5] (SECON), 978-1-4673-1905-8/12/\$31.00 ©2012 IEEE
- [6] SokratisKartakis, Weiren Yu, Reza Akhavan, and Julie A. McCann, 2016 IEEE First International Conference on Internet-of-Things Design and Implementation, 978-1-4673-9948-7/16 © 2016IEEE
- [7] MithailaBarabde, shrutiDanve, Real Time Water Quality Monitoring System,IJRCCE, vol 3, June 2015.
- [8] AkankshaPurohit, UlhaskumarGokhale, Real Time Water Quality Measurement System based on GSM , IOSR (IOSR-JECE) Volume 9, Issue 3, Ver. V (May - Jun. 2014)
- [9] Eoin O'Connell, Michael Healy, Sinead O'Keefe, Thomas Newe, and ElfedLewis, IEEE sensors journal, vol. 13, no. 7, July 2013, 1530-437x/\$31.00 © 2013 IEEE
- [10] Nidal Nasser, Asmaa Ali, LutfulKarim, Samir Belhaouari, 978-1-4799-0792-2/13/\$31.00 ©2013 IEEE
- [11] Niel Andre cloete, Reza Malekian and Lakshmi Nair, Design of Smart Sensors for Real-Time Water Quality monitoring, ©2016 IEEE conference