

# Water Quality Monitoring and Purification System Using Arduino

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**Abstract:** This project presents a smart and cost-effective system for water monitoring and water purification based on Arduino. The objective is to provide safe drinking water by monitoring vital water quality parameters continuously like pH, turbidity, temperature, and Total Dissolved Solids (TDS). The Arduino microcontroller reads data from sensors and provides the output in real-time. If the water turns out to be unsafe, the system turns on a simple purification unit employing filters and UV light. This arrangement is low-cost, low-maintenance, and ideal for rural and mountainous regions where access to clean water is sparse. The system can also be enhanced with IoT to transmit information online for far-off monitoring. As a whole, it is a simple yet efficient remedy for water quality control.

**Keywords:** Arduino, IR sensor, Turbidity sensor, dc pump, 16\*2 LCD Display, Calibration Button, Capacitor

