Solar-Powered Water Quality Monitoring Device

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Abstract

This paper outlines a low-cost, solar-powered water quality monitoring system design and implementation. Water is indispensable for life, yet contaminated water is responsible for a large proportion of infections and other waterborne diseases causing millions of deaths each year. Because of this, the first objective is to come up with a water quality monitoring system that can be powered by solar energy living up to the energy demand in rural areas where the power supply is always one of the issues. The project suggests an Arduino UNO microcontroller based device integrated with pH, turbidity and temperature sensors. The system operates on direct solar energy without an external power source. The battery backup is designed for continuous energy supply. Drinking water, tap water, and contaminated water are just some of the sources of water from which samples were collected for test purposes. To show the real-time readings and indicate the safety status, a liquid crystal display (LCD) and light emitting diodes (LEDs) were used.

Keywords

pH, solar power, temperature, turbidity, water quality monitoring.