

Modular Probe for Basic Monitoring of Water and Air Quality

Authors : Andrés Calvillo Téllez, Marianne Martínez Zanzarric, José Cruz Núñez Pérez

Abstract : A modular system that performs basic monitoring of both water and air quality is presented. Monitoring is essential for environmental, aquaculture, and agricultural disciplines, where this type of instrumentation is necessary for data collection. The system uses low-cost components, which allows readings close to those with high-cost probes. The probe collects readings such as the coordinates of the geographical position, as well as the time it records the target parameters of the monitored. The modules or subsystems that make up the probe are the global positioning (GPS), which shows the altitude, latitude, and longitude data of the point where the reading will be recorded, a real-time clock stage, the date marking the time, the module SD memory continuously stores data, data acquisition system, central processing unit, and energy. The system acquires parameters to measure water quality, conductivity, pressure, and temperature, and for air, three types of ammonia, dioxide, and carbon monoxide gases were censored. The information obtained allowed us to identify the schedule of modification of the parameters and the identification of the ideal conditions for the growth of microorganisms in the water.

Keywords : calibration, conductivity, datalogger, monitoring, real time clock, water quality

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