

Design and Implementation of An Arduino and Labview-Based Sensor Monitoring and Control System

Raviraj. R¹, Dr. J. Vijayakumar², Dr. R. Maheswaran³

PG Student, Department of Electronics and Instrumentation¹

Associate Professor and Head, Department of Electronics and Instrumentation²

ATO, Department of Electronics and Instrumentation³

Bharathiar University, Coimbatore

Abstract: *In recent days Industry 4.0, the convergence of low-cost hardware and intuitive software platforms has opened new avenues for real-time process automation and environmental monitoring. This proposed work development and testing of a comprehensive monitoring and control system that utilizes Arduino and LabVIEW to manage proximity, fluid level, and temperature data in real time. The system incorporates multiple sensors interfaced with an Arduino Uno microcontroller, transmitting data to a LabVIEW GUI that visualizes inputs and logs outputs. A feedback-based temperature control unit is also implemented. The system demonstrates a cost-effective, scalable solution ideal for educational laboratories and small-scale industrial automation, with real-time visualization, control, and logging capabilities.*

Keywords: Arduino Uno, LabVIEW, Sensor and Data Logging

