

## Design and Implementation of a Monitoring System Using Arduino and MATLAB

**Authors :** Jonas P. Reges, Jessyca A. Bessa, Auzuir R. Alexandria

**Abstract :** The research came up with the need of monitoring them of temperature and relative moisture in past work that enveloped the study of a greenhouse located in the Research and Extension Unit(UEPE). This research brought several unknowns that were resolved from bibliographical research. Based on the studies performed were found some monitoring methods, including the serial communication between the arduino and matlab which showed a great option due to the low cost. The project was conducted in two stages, the first, an algorithm was developed to the Arduino and Matlab, and second, the circuits were assembled and performed the monitoring tests the following variables: moisture, temperature, and distance. During testing it was possible to momentarily observe the change in the levels of monitored variables. The project showed satisfactory results, such as: real-time verification of the change of state variables, the low cost of acquisition of the prototype, possibility of easy change of programming for the execution of monitoring of other variables. Therefore, the project showed the possibility of monitoring through software and hardware that have easy programming and can be used in several areas. However, it is observed also the possibility of improving the project from a remote monitoring via Bluetooth or web server and through the control of monitored variables.

**Keywords :** automation, monitoring, programming, arduino, matlab

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020