

# ***Design and Build an Arduino Nano-Based Irrigation System Using a Moisture Valve Sensor and a Water Pump***

**Khori Pamungkas**

*Electrical Engineering Study Program, Faculty of Science and Technology*

*University of Technology Yogyakarta*

*Jl. Ringroad Utara Jombor Sleman Yogyakarta*

*E-mail : [Khoripamungkas29@gmail.com](mailto:Khoripamungkas29@gmail.com)*

## **ABSTRACT**

*Water is a natural resource that is very important for human needs, one of which is in agriculture. Most Indonesians make a living as farmers who use rivers, reservoirs, lakes, and wells for their main water sources. Irrigation is a very important factor and also affects agricultural yields, especially rice. Water itself is a basic resource that supports agricultural activities, if there is no water, farming activities will not work. In general, irrigation of rice fields uses an irrigation irrigation system or irrigates rice fields with water directly from the source, namely rivers. In some places, irrigation methods are used only for agriculture that produces basic needs. But in other places that have abundant water conditions, irrigation methods are also provided for all types of plants. In this case, the author designed an irrigation system prototype using a moisture sensor to measure soil moisture on a paddy field connected to a microcontroller in the form of an Arduino nano. This aims to measure the success rate of using the YL-69 sensor in an automatic irrigation system, knowing dry soil conditions. or wet so that it is easy for farmers to control their plots of rice fields when irrigating or planting crops.*

**Keywords:** *rice field irrigation, arduino uno, pump valve, irrigation..*