

# PERANCANGAN SISTEM KENDALI ELEKTRONIK MIKROSKOP BERBASIS ARDUINO UNTUK DIGITALISASI OBJEK SELURUH LAPANG PANDANG MULTI PREPARAT (STUDI KASUS : PT. NEURA INTEGRASI SOLUSI)

**Daniel Prasetya**

Program Studi Teknik Komputer, Fakultas Sains dan Teknologi  
Universitas Teknologi Yogyakarta  
Jl. Ringroad Utara Jombor Sleman Yogyakarta  
E-mail : [danielpras026@gmail.com](mailto:danielpras026@gmail.com)

## ABSTRACT

*Demand for image-based diagnostics is increasing globally, including in the medical and biotechnology fields. The increase in cancer cases occurs every year in Indonesia. However, the resources of experts are still minimal, and the development of medical diagnostic technology in Indonesia, which is considered less rapid, poses a challenge in developing an automatic microscopic tool to research diseases, cancer, and other diseases. For about 100 years, a cancer diagnosis has been limited to subjective interpretation by experts, from specimens to preparations that can be seen by the human eye using a microscope and an X-ray or CT scan. In order to speed up the microscopic process and increase the precision in the diagnostic process of disease research, we designed an automatic microscopic tool that is used to perform automatic scanning of preparations. In this case, an automatic micro scanner is created with a control system design that has been embedded in the device so that it can carry out the commands given by the user to overcome these challenges. Because it is considered to be able to perform automatic scanning of microscopic image data without doing research manually, it is much more efficient and precise. It provides flexible solutions that can be applied in education, research, drug development, diagnostic processes, and other data processing.*

**Keywords:** Control System, Micro scanner, Microscope