ABSTRACT

The role of laboratories in vocational education is a very important learning tool, in order to improve the quality of learning in the laboratory. then we need support facilities in overcoming difficulties due to limitations of the tool which is one of the factors that become obstacles in the laboratory.

In this final project have been made learning tools and applications in the Optical Communication System (SKO) practicum on Matlab-based Numerical Aperature (NA) as an interactive and flexible learning method with a more practical system to help understanding of how to detect and analyze light that is reflected on a flat plane. As well as knowing the results of the size of the light reflected to the flat plane.

Based on the results of testing from this final project produces horizontal and vertical diameters based on a distance of 9 cm and 11 cm using noise and without noise. The results of experiments that have been tested to get tests without noise are better than using noise both from the beam results (beam of light), light intensity, frequency domain and histogram.

keywords: Optical Fiber, Numerical Aperture, Matlab.