

## ABSTRACT

The increasing in broadband communication requires high reliability. We need a reliable transmission medium and optical fiber is one eligible alternative. Despite its advantage, there is loss affecting its performance such as absorption, scattering, and bending. The Loss caused by bending consists of macrobending and microbending.

The researched Loss is the Loss caused by macrobending in multimode step index optical fiber. This macrobending loss research is done by taking the empirical data based on the measurement in IT Telkom SKSO laboratory. This measurement uses different radius of curves for the same multimode step index and different Numerical Aperture (NA) for different multimode step index. Programmable Light Source (PLS) is used as source of light and optical power meter is used in receiver.

The results from this measurement is the relation between optical multimode step index with different radius of curves and relation with Numerical Aperture (NA). The relation is described into graphs and equation, in this case linier and degree function. Besides, the critical radius when bending in optical fiber occurs can be calculated.