ABSTRACT

The utilizing of fiber optic transmission medium recently is wider along with the demand of high speed communication system and big capacity. Fiber optic is well known as transmission medium that has good reliability than others. Optimum fiber optic work is not relieved from function of other optic components, one of them is optic filter. Optic filter has various kinds, one usually used is Fabry-Perot. This filter uses the resonance that is happened in cavity between two mirrors to escape certain wave length. Fabry-Perot work is influenced by several parameters i.e. index of refraction (n), distance between two mirrors (d), number of layers (N), and mirror reflectance (R).

In this final project simulation has been done to show the parameters influence toward signal transmission. To support the simulation, was used Matlab 7.0 software with interface GUI.

Changing of number of layers (N) influences mirror reflectance (R) as a result. Higher mirror reflectance causes number of wave lengths, which is passed, becomes less. Changing of refractive indices (n) had caused changing of FSR, FWHM, and *Finesse* values. Changing of distance between two mirrors parameter (d) had caused changing of number of wave lengths which were transmitted. By observing these changing, we can make setting to get transmission output at certain wave lengths.

Keywords : refractive indices, distance between two mirrors, number of layers, mirror reflectance