

## ABSTRACT

*Optical fiber communication system is a telecommunications system able to provide data rate in tera hertz. This advantages support the development of telecommunications system in the world which needs high data rate and big bandwidth. Although, this system have high data rate, but the needs of citizen is high traffic, so contention and delay possible happen. One of the way to solve this problems is optical buffer. Optical buffer can be realized by used Fiber Delay Line. There are some method to create a FDL. One of them is Coupled Resonator Optical Waveguides (CROWs).*

*In this final exam, CROWs is used to realize a Fiber Delay Line. CROWs can be use to be optical buffer because of this toll can store some data for a period. The different of time delay that happen in CROWs because of there is gap phase between each wavelength. The ability to store and become an optical buffer can be implicated into WDM technology. This method use an optical resonator especially ring resonator in tiny size. In this condition, each resonator can couple each other. The parameters that influence CROWs such as: wavelength, number of resonator that use in CROWs, radius of resonator, transmit constant, and index bias of fiber optic that use.*

*In this final paper, that parameter has been analysed to be input to get the optimum time delay in optical fiber communication system. From the simulation, to increase time delay, so that parameter such as number resonator, radius of resonator have to increase*