

## ABSTRACT

In long distance optical communication system need an amplifier for compensate attenuation along light trip. Optical amplifier that recently use is Raman amplifier and EDFA. Raman has some advantages like amplification flexibility, low noise, not depend on dopant optical waveguide and broad gain spectrum. But like other optical amplifier, Raman just has main noise called ASE (*Amplified Spontaneous Emission*).

ASE noise appear in Raman amplifier that produce from sum of emission along optical waveguide. On the optical amplifier with low power pump, ASE has not significant influence, but with high power pump ASE more influence in system. Filter ring resonator used for flattened ASE in Raman amplifier, more flat is more optimum.

This research was done to get a correct combination of radius parameter and reflection size to yield optimum flattening area. Ring resonator give optimum result flattening at refractive index ( $n$ ) 1,469, radius of ring ( $R_{ad}$ ) 5,8  $\mu$  m and reflection size ( $r$ ) 0,51.

Keyword : Raman Amplifier, ASE noise, Ring Resonator