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# Simulation of Slow and Fast light in Ring resonator with changing polarization and number of rings

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**Abstract:** In this thesis considering a waveguide and one or more ring resonator investigated the effect number of rings on the speed of light, and then this process was done for input polarization and the influence on creating fast and slow light. Finally the effect of changes in both the number of ring resonator and the input polarization is simulated as a general model by software. Also the model also is presented that will prove its relations to have two slow light phenomena and light fast. And at the same time it can be concluded both phenomenon it. All procedures are performed using a ring resonator which has a simple structure and this further confirms the efficiency of this research. **Key words:** Ring resonator, polarization, fast light, slow light

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