World Academy of Science, Engineering and Technology
International Journal of Electronics and Communication Engineering
Vol:8, No:12, 2014

Study of a Fabry-Perot Resonator

Authors : F. Hadjaj, A. Belghachi, A. Halmaoui, M. Belhadj, H. Mazouz

Abstract : A laser is essentially an optical oscillator consisting of a resonant cavity, an amplifying medium and a pumping source. In semiconductor diode lasers, the cavity is created by the boundary between the cleaved face of the semiconductor crystal and air and also has reflective properties as a result of the differing refractive indices of the two media. For a GaAs-air interface a reflectance of 0.3 is typical and therefore the length of the semiconductor junction forms the resonant cavity. To prevent light, being emitted in unwanted directions from the junction and Sides perpendicular to the required direction are roughened. The objective of this work is to simulate the optical resonator Fabry-Perot and explore its main characteristics, such as FSR, Finesse, Linewidth, Transmission and so on that describe the performance of resonator.

Keywords : Fabry-Perot Resonator, laser diod, reflectance, semiconductor
Conference Title : ICPO 2014 : International Conference on Photonics and Optoelectronics
Conference Location : Paris, France
Conference Dates : December 30-31, 2014