



ChemTech

International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.9, No.08 pp 338-347, 2016

Stabilization of an External Cavity Quantum Dot Semiconductor lasers dynamics with Optical Feedback

Afrah Yass Hamdan, Basim Abdullattif Ghalib*

Laser Physics Department, Science College for Women, Babylon University, Hilla, Iraq.

Abstract : Stability of an Short External Cavity (SEC) of Quantum Dot Semiconductor lasers(QDSEL) dynamics with Optical Feedback is studied. The effect of short external cavity length and linewidth enhancement factor of Quantum Dot Semiconductor lasers(QDSEL) are studied. The rate equations describing QDSEL dynamics are solved numerically. The simulation shows that the photon density are sensitive to short external cavity length. The study proves that QDSEL dynamics is strongly affected of short External cavity length and linewidth enhancement factor with optical feedback in chaos communication lasers.

Keywords : Quantum dot, semiconductor laser, optical feedback, linewidth nhancement factor, short external cavity length.

Basim Abdullattif Ghalib *et al* /International Journal of ChemTech Research, 2016,9(8),pp 338-347.
