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# Effect of the Structural Parameters on Subbands of Fibonacci $Al_xga_{1-X}as$/Gaas Superlattices

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This work is to study the effect of the variation of structural parameters on the band structure in the quasiperiodic Fibonacci superlattices $Al_xGa_{1-x}As$/GaAs using the formalism of the transfer matrix and Airy functions [1]. Ours results show that increasing the width of Fibonacci's wells af allows to the confinement of subminibands with a widening of minigaps, this causes a consistent and coherent fragmentation. The barrier thickness of Fibonacci bf acts on the width of subminibands by controlling the interaction force between neighboring eigenstates. Its increase gives rise to singularly extended states. The barrier height Fibonacci $V_f$ permit to control the degree of structural disorder in these structures [2]. The variation of these parameters permits the design of laser with modulated wavelength [3].

**Keywords:** Transmission coefficient – Quasiperiodic superlattices - Singularly localized and extended states - Structural parameters - Laser with modulated wavelength

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