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New method of MOVPE process design for the growth of FGM AlGaAs/GaAs photodetectors

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Keywords

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Abstract

In this paper, the authors present a new attempt to the growth of AlGaAs structures with continuous change of aluminum content by metalorganic vapor phase epitaxy (MOVPE) technique. The new method of design of multistage growth process for functionally graded semiconductor materials (FGM) has been proposed. A comparison between classical single stage and multistage growth process has been carried out. The analysis of PVS, ECV and SIMS results of fabricated photodetector structures shows significant differences in composition profile of theoretically estimated and fabricated structures, and prove that the new conception of multistage process has more advantages over classical single stage procedure.