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Properties and origin of oval defects in epitaxial structures grown by molecular beam epitaxy

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Keywords

oval defects, A^3B^5 , molecular beam epitaxy (MBE), spectrally resolved photoluminescence, scanning electron microscopy (SEM), cathodoluminescence

Abstract

A class of macroscopic, so-called oval defects, which may be found in an epitaxial A^3B^5 materials grown by molecular beam epitaxy (MBE) technique, is studied in this paper. The investigations were performed on the structures containing (Al)GaAs or InGaAs layers. The geometry, morphology as well as the optical properties of defects were studied by different experimental methods, like spatially resolved photoluminescence (SRPL), scanning electron microscopy (SEM) and cathodoluminescence (CL). The conclusions are drawn as to the sources of defects and conditions of their appearance.



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