

Step Annealing Effects on Be-doped GaAs layer grown by Molecular Beam Epitaxy

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For the last few decades, there have been many studies investigated about annealing effects of dopant-doped structure based on GaAs substrate. Rapid Thermal Annealing (RTA) is the one of advanced ways to make structure of material(e.g GaAs) stabilized and cured. Moreover, RTA with several steps has lots of potentiality of new annealing effects on materials.

In this study, We have studied the properties of Be-doped GaAs Layer grown by Molecular Beam Epitaxy (MBE) with ex-situ stepped-RTA. Surface-morphological properties of the samples are examined by Atomic Force Microscopy (AFM). Also variations of carrier mobility and carrier concentration are examined by Hall measurement. And then, from the results, we are able to discuss morphological and electrical properties of step annealed layer.

Keywords : molecular beam epitaxy, atomic force microscope, hall measurement, doped GaAs, step annealing, rapid thermal annealing