

Name-Surname	Sandra Spanoudaki
Thesis Title	<i>Epitaxial growth of Ga-polar GaN-nanocolumns on Si(111) with AlN buffer layer</i>
Supervisor	George Papaioannou, Professor
Summary	<p>This thesis deals with the position-controlled selective area growth of Ga-polar nanocolumns by molecular beam epitaxy. The thesis is divided into two parts.</p> <p>Part I reviews the theoretical background which is necessary for the understanding of this work. It consists of an introduction to the experimental techniques used in this work, an introduction to the materials studied and a suggested path towards optimal results.</p> <p>Part II presents results on the study of the deposition of amorphous silicon nitride thin films by plasma-enhanced chemical vapor deposition, the heteroepitaxy of AlN buffer layer on Si(111), and finally the selective area growth of GaN nanocolumns. The route towards the optimization of the above steps will be presented. An outlook of the thesis is following the above two parts, which summarizes the main achievements and conclusions of this research. Based on the results of this thesis, suggestions for future research on selective area growth of GaN nanocolumns by molecular beam epitaxy will be presented.</p>
Key words	Molecular beam epitaxy, nanocolumns, GaN, PECVD, Si
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