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(54) Title: DEPOSITION OF AIN ON A SILICON SUBSTRATE AND GaN SEMICONDUCTOR TRANSITION LAYER STRUCTURE

(57) Abstract: The present invention relates to a method for depositing AIN on a silicon substrate arranged in a process chamber. The method comprises: arranging an aluminum target in said process chamber; providing a process gas composition comprising a noble gas and nitrogen to said process chamber; ionizing said process gas composition by providing an electric field and a magnetic field such that a getter of noble gas ions and nitrogen ions is formed; sputtering said aluminum target while applying a positive bias on the silicon substrate; and depositing an epilayer of aluminum and nitrogen on the silicon substrate. The present invention further relates to a gallium nitride semiconductor transition layer structure comprising a AIN epilayer obtained by the method.



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