

Growth of GaN quantum dots using [(C₂H₅)₄Si] by plasma assisted MOCVD

Growth of GaN quantum dots on AlGa_N layer using [(C₂H₅)₄Si] [TESi] by plasma assisted metal organic chemical vapor deposition (PA-MOCVD) is reported. The surface profile of the grown GaN quantum dot was determined by atomic force microscope (AFM). The typical average density of the dots is around $4 \times 10^9 \text{ cm}^{-2}$, while the diameter and the height of the dots are approximately 100 and 50 nm, respectively. The density and the size of the dots significantly depend on the dose of TESI. It is found that the growth mode was changed from the two-dimensional step-flow to the three-dimensional island formation by modifying the AlGa_N surface energy induced by the deposited Si.