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**양극산화 알루미늄 templates 를 이용한 Si 기판 위 정렬된
GaAs nanodot 의 MBE 성장**

**Growth of ordered GaAs nanodot arrays on Si substrate using anodized
aluminum oxidied templates via MBE**

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The growth of highly ordered nanodot arrays has been intensively studied in recent years for their unique properties of quantum effect in 0-dimensional shape. The anodized aluminum oxide(AAO) can be used as template for nanodots fabrication in the range of 25-300 nm. The AAO was prepared using two step anodic oxidation process from Al thin film with a thickness of 2 μm deposited on Si (100) substrate. The synthesized nanohole arrays in AAO has uniform pores with the size of ~ 50 nm, and thickness of ~ 150 nm. Ordered GaAs nanodot arrays were grown using AAO template via Molecular beam epitaxy (MBE) at the condition of various substrate temperature (580-650 $^{\circ}\text{C}$), flux of Ga (1100-1115 $^{\circ}\text{C}$) and the growth time (15-40 minutes). The effects of three parameters on the morphology of GaAs nanodots were measured by FE-SEM, XRD and Photoluminescence.

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