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# Effects of *In-situ* UV Irradiation on the Uniformity and Optical Properties of GaAsBi Epi-layers Grown by MBE

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**Abstract**

*In-situ* UV illumination influences the incorporation dynamics of bismuth adatom in GaAs. Here we use the inherent variation of the fluence across the sample to explore the role of the incident irradiation. With illumination it is found that steady state growth processes are achieved more quickly resulting in more abrupt interfaces, as well as uniform $GaAs_{1-x}Bi_x$ epi-layers. Comparisons of low temperature photoluminescence spectra show an increasing density of clusters of incorporated bismuth atoms with decreasing incident fluence.

*Keywords:* A3. Molecular beam epitaxy; A1. Impurities; B1. Bismuth compounds; B2. Semiconducting III-V materials

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