

## **Review**

# **Molecular Beam Epitaxy growth of III-V Semiconductor Nanowires**

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### **Abstract**

Semiconductors nanowires (NWs) are promising building blocks for applications in optoelectronic devices due to their exceptional properties including epitaxial growth insensitive to lattice mismatch. Molecular beam epitaxy (MBE) has emerged as an advanced ultra-high vacuum epitaxial technique for the growth of high purity NWs with great precision. A proper understanding of the MBE growth technique and its advances over existing technologies is crucial in order to maximally exploit its capabilities for the growth of high quality NWs with potential for application in novel, high performance optoelectronic devices. In this review, the advantages of the MBE growth technique is first presented then, an overview of the benefits of the NW geometry for device applications is highlighted. Finally, recent developments in the growth of semiconductor NWs by MBE is elucidated.

**Keywords: Nanowires, molecular beam epitaxy, semiconductor**