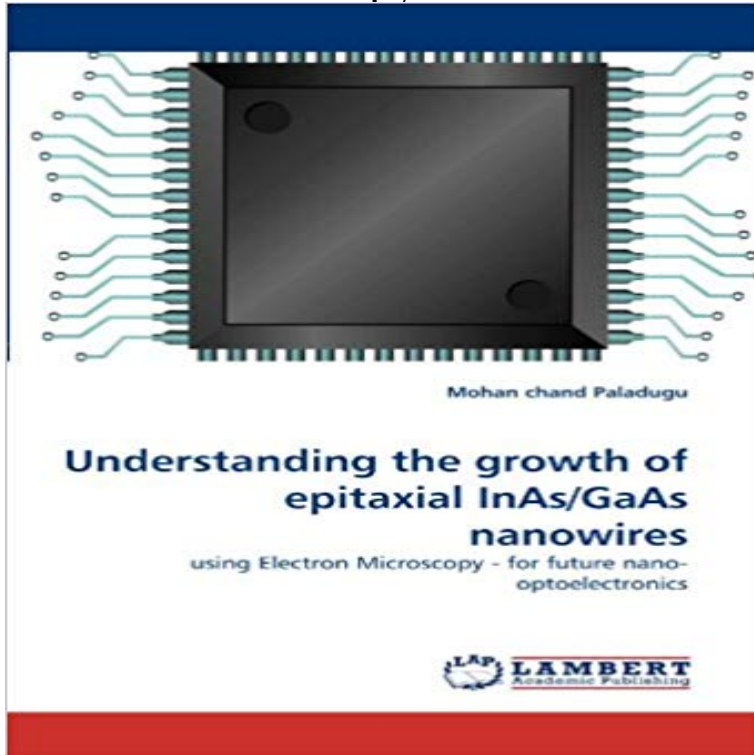


# Understanding the growth of epitaxial InAs/GaAs nanowires: using Electron Microscopy - for future nano-optoelectronics



Materials in smaller scales exhibit promising properties that are useful for wide variety of applications. Semiconductor quantum wells and quantum dots are two main examples of low-dimensional systems, where the quantum wells act as two-dimensional systems and the quantum dots act as zero-dimensional systems. Alternatively, semiconductor nanowires act as one-dimensional materials, and they exhibit promising and device applicable properties. These semiconductor nanowires are expected to be the building blocks for future nanoelectronic and nano-optoelectronic device technology. Compositional modulation within an individual nanowire (heterostructure) enables the designing of band structure of a nanowire and thereby allows the fabrication of single nanowire devices. These nanowire heterostructures show many potential properties and consequent applications. However, the fundamental growth mechanisms nanowire heterostructures have not been explored sufficiently due to their complex nature of the growth. In this regard, this book addresses the fundamental issues associated with the growth of epitaxial axial and radial nanowire heterostructures.

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