Incorporating nitrogen in InAsN/GaAs quantum (Technion)

code: MAE-1140

In recent years, the dilute nitride alloys (III-V-N) has been the subject of intense theoretical and experimental research effort because of their ability for band gap and band offset engineering, and thus have potential for a wide range of optoelectronic device applications. By optimizing the nitrogen content, the lattice constant and band-gap energy can be varied over a wide range tailoring the material's properties to a specific application, such as near-infrared (IR) lasers and quantum-well IR photo detector (QWIP) devices. However, the growth of high-indium-content dilute nitrides using metal organic chemical vapor deposition (MOCVD), which is important for such applications, is not straightforward. This laboratory-tested method overcomes this difficulty and allows for the manufacture of high-quality structures tailor-made for specific optical communication devices.

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