

Department of Electronic Engineering

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Research

For high-performance optoelectronic and electronics base on strained multilayer structure, the formation of dislocation during creation of devices must be avoided. My project is to study the structure of dislocation in semiconductor material due to the line tension force in dislocation, the Peierls-Nabarro stress force, the force exerted by misfit strain, the force due to the interaction between a moving dislocation and other defect in crystal and the force due to cancelling surface stresses. This study required to understand the elasticity theory which is the stress, strain and displacement in plastic deformation. Also theory of dislocation is required to appreciate which involve the Burgers vector, screw dislocation, edge dislocation, mix dislocation, image force, straight dislocation etc.

