

Influence of Magnetic Field on pn Junction

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Abstract:

The influence of an external magnetic field on the electric current across pn junctions has been studied at room temperature (300 K) theoretically and experimentally. When a magnetic field (0T to 1.0T) which is parallel to the junction region is applied , the current- voltage curves shift to the high bias region. Both hole diffusion coefficient and characteristic tunneling energy are affected by the magnetic field. We will study semi-phenomenology approach to explain this magnetic field dependent parameters, employing experimental data.