

Studies on n-type silicon after electron irradiation

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The work focuses on the study of radiation damage in n-type silicon diodes induced by electrons of different kinetic energies, from 1.5 MeV to 15 MeV, in order to study the differences between point and cluster-related defects. For the characterization of the radiation induced defects the Thermally Stimulated Current (TSC) and Deep Level Transient Spectroscopy (DLTS) methods were used. The introduction rates of vacancy-related point defects and of defects in so-called disordered regions as function of electron energy are shown. While the irradiation with 1.5 MeV electrons leads to creation of only point defects the formation of cluster defects starts already at 3.5 MeV. The obtained results will be presented and discussed.

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