

Annealing induced evolution of defect centres in MCz silicon irradiated with a neutron fluence of $1\text{e}16\text{ cm}^{-2}$

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High-resolution photoinduced transient spectroscopy (HRPITS) and photoluminescence (PL) measurements have been employed to studying the annealing-induced changes in the defect structure of MCz Si irradiated with the very high fluence of 1-MeV neutrons. The defect centres were studied after three annealing steps: 1h, 80 oC; 1h, 80 oC + 1h, 160 oC and 1h, 80 oC + 1h, 160 oC + 1h, 240 oC. It is found that annealing allows the observation of the self-interstitial related W-line in the PL spectra. This is probably due to the annihilation of non-radiative recombination centres. The defect reaction induced by the annealing lead to the significant increase of the A-centres concentration.

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