

DEFECT FORMATION IN 61 MeV
PROTON-IRRADIATED TIN-DOPED
n-TYPE SILICON

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S u m m a r y

A deep-level transient spectroscopy study of defects created in 61 MeV proton-irradiated tin-doped *n*-type Czochralski (Cz) silicon is performed. A comparison is made with the spectrum of deep levels observed in irradiated p^+n diodes fabricated in *n*-type Float-Zone (FZ) silicon, without tin doped. The main conclusions are that, in Sn-doped material, at least additional deep radiative levels are introduced at (0.29 ± 0.01) and (0.61 ± 0.02) eV below the conduction band. From annealing experiments, it is concluded that these electron traps disappear at 120 °C. In addition, it is demonstrated that the introduction rates of the well-known radiation defects like the vacancy-oxygen (A-centers) and the divacancy (V_2) centers are significantly smaller in Sn-doped material.