

# Annealing induced evolution of defect centers in epitaxial silicon irradiated with high proton fluences

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High-resolution photoinduced transient spectroscopy (HRPITS) has been used to studying the effect of isochronal annealing temperature on the properties defect centers in epitaxial silicon exposed to irradiation of 24 GeV/c protons with fluences ranging from  $5 \times 10^{15}$  to  $1.6 \times 10^{16} \text{cm}^{-2}$ . The defect levels for standard and oxygenated epilayers have been compared. The main decrease in the concentrations of the defect centers in the both kinds of layers is observed after annealing at 160 oC. After annealing at 240 oC, the concentrations of midgap centers with activation energies of 420 meV and 535 meV, attributed to divacancies and higher order vacancies aggregates, are found to be approximately two times lower in the oxygenated epilayers than those in the standard epilayers.

**Author:** KAMINSKI, Pawel (Institute of Electronic Materials Technology)

**Co-authors:** FRETWURST, Eckhart (Institute for Experimental Physics, University of Hamburg); ZELAZKO, Jaroslaw (Institute of Electronic Materials Technology); KOZLOWSKI, Roman (Institute of Electronic Materials Technology)

**Presenter:** KAMINSKI, Pawel (Institute of Electronic Materials Technology)

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