

Carrier recombination characteristics in neutron irradiated Si at extreme fluences

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The carrier recombination properties of semiconductors are critically influenced by defect species introduced by irradiations. In particle detectors, a reduction in carrier lifetime correlates with the degradation of charge collection efficiency and with an increase of leakage current. To develop radiation hard particle sensors and to predict variations of sensor functional parameters with aging, the investigation of recombination processes in pristine and irradiated detector materials is of paramount importance.

In this talk, carrier recombination characteristics in Si, irradiated by reactor neutrons up to extreme fluences (10^{18} cm^{-2}), will be considered. The results were obtained by the contactless microwave probed photoconductivity transients technique and the pump-probe setup by employing femtosecond laser pulses.

Type of presentation (in-person/online)

in-person presentation

Type of presentation (I. scientific results or II. project proposal)

I. Presentation on scientific results

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