



Contribution ID: 500

Type: Oral Presentation

Investigation of the isochronal annealing profiles of the E centres in n-type silicon

Tuesday, 5 July 2016 11:30 (20 minutes)

Abstract content
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The vacancy-dopant complex in Silicon, often referred to as the E-center, is a well-known defect. In this study, we investigated vacancy complexes with three common dopants namely the Sb, P and As by measuring isochronal annealing profiles of all three E centres in n-type silicon.

Si doped with P and combinations of P with Sb and As were exposed to alpha radiation from an Am-241 source. By making use of high-resolution Laplace deep-level transient spectroscopy, we were able to distinguish the different E-centers from each other, and measure their annealing rates individually. Since the Schottky contacts degraded with temperature, a novel approach was taken, where annealings were done with the Schottky contacts replaced after each annealing.

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Msc

Main supervisor (name and email) and his / her institution

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Session Classification: Division for Physics of Condensed Matter and Materials (2)

Track Classification: Track A - Division for Physics of Condensed Matter and Materials