**Solutions of diffusion equation**

**for point defects**

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**Abstract**

An analytical solution of the equation describing diffusion of intrinsic point defects in semiconductor crystals has been obtained for a one-dimensional finite-length domain with the Robin-type boundary conditions. The distributions of point defects for different migration lengths of defects have been calculated. The exact analytical solution was used to verify the approximate numerical solution of diffusion equations for vacancies and self-interstitials. Based on the numerical solution obtained, investigation of the diffusion of silicon self-interstitials in a highly doped surface region formed by ion implantation was carried out.

**Keywords:** silicon, implantation, point defect diffusion, modeling