# Defect study in impurity doped Si and related crystals

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Besides high quality Si crystals, low resistive semiconductor materials are required in trend of miniaturization of devices into nano-scale, and thus, elucidation of defect properties in impurity-doped materials is indispensable. In addition, such study can be significant for addressing researches of point defects in undoped and high quality Si crystals, premised to be free from dislocations, in a view points that impurity will perturb their formation/annihilation. Here, some results on defects in Si crystals doped with electrical and neutral impurities, including solid solution crystals, under observations by several methods can be discussed: vacancy formation, dislocation activities, stacking fault development, and atomic fine structure, etc.