

## **Analysis of Si crystal irradiated by highly-charged Ar ions using RBS-channeling technique**

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The ion beam is one of the powerful tools applied in nanotechnology and nanoscience. The series of fundamental researches have shown unique phenomena induced by a high reactivity of highly-charged ion (HCI) beams. It is expected that the application of HCI beams would promote the further application of the ion beam method. In order to investigate fundamentals of the irradiation effect of HCI beams, Si crystal, which was irradiated by HCI beams, was analyzed by means of RBS-channeling technique.

Ar<sup>1+</sup> and Ar<sup>9+</sup> ion beams, which were prepared by a facility built at Kochi University of Technology, were irradiated onto a single crystal of Si. The acceleration energy of Ar ions was 100 keV. The defects produced in irradiated Si crystal were detected by RBS-channeling technique. By analyzing RBS-channeling spectra for Ar<sup>1+</sup> and Ar<sup>9+</sup> ion beams, the charge state effect on the production phenomena of defects in Si crystal will be discussed.