Imaging and Depth Profiling of SiC-MOSFET by NanoSIMS 50L

3D imaging of SiC-MOSFET was obtained by NanoSIMS 50L, which is a secondary ion mass spectrometer with high lateral resolution and sensitivity. Depth profile of ROI (region of interest) extracted from the 3D image shows a large dynamic range of n-type dopant of phosphorus.

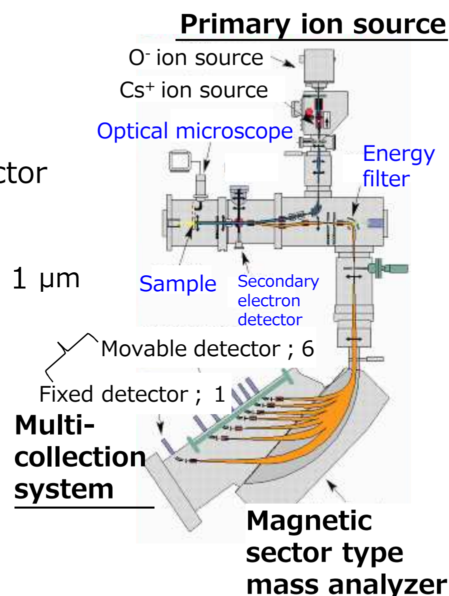
NanoSIMS 50L

Imaging & Depth Profile

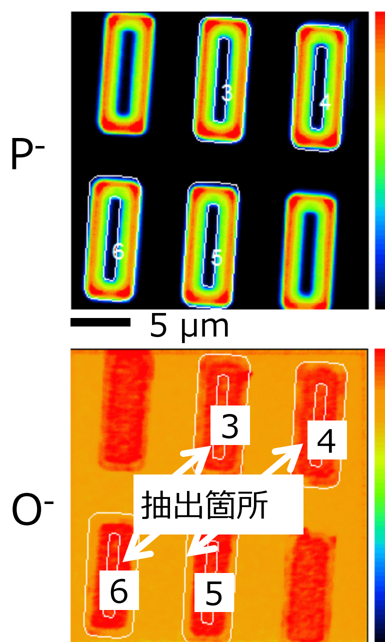
- High lateral resolution
- High sensitivity
- Isotope analysis

- Primary ion : Cs^+, O^-
- Beam size : 50 nm
- Detection limit : ppb – ppm
- Mass analyzer : Magnetic Sector
- Number of ion detected simultaneously : 7
- Depth capability : 数10 nm – 1 µm

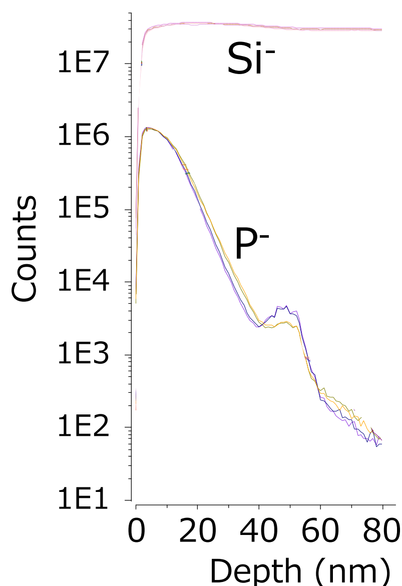
AMETEK

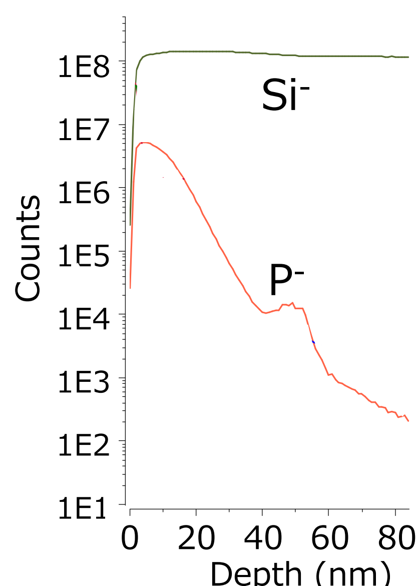


Imaging and Depth Profiling of SiC-MOSFET*



Imaging at 2-3 nm depth





- Depth profile of ROI (region of interest) from 3D data
- Large dynamic range of Phosphorus

*Silicon Carbide Metal-oxide-semiconductor Field Effect Transistor