

Microscopic analyses of radioactive contamination in Fukushima soil

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Since the accident at Fukushima Daiichi Nuclear Plant in 2011, it has been required to trace the behavior of the released radionuclides, particularly the radioactive cesium, in the natural environment. However, in the actual contaminated soil, the radioactive cesium presents in extremely low concentration (~0.1 ppb) which makes it difficult to locate it chemically. Last year, we could successfully identify the radioactive particles in the actual soil using autoradiography with micro-processed imaging plates (IP), and revealed the adsorbents of the radioactive cesium mainly by electron microscopy (Mukai et al., 2014). We are now investigating the distribution of the radioactive cesium in the particles by the combination of autoradiography and micro-processing using focused-ion-beam (FIB). In this talk, these results will be presented.

Keywords: Fukushima nuclear accident, Contaminated soil, Radioactive cesium, Electron microscope