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Development of Decontamination Technique for Radioactive Cs in Soil Using Composite Material of Na-P1 Type Zeolite and Magnetite

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Summary

Na-P1 type zeolite is a porous material with its pore opening size similar to the diameter of Cs^+, and has considerably high adsorption selectivity for Cs^+. In Fukushima, we conducted experiments to remove radioactive Cs from some soils, by using magnetized Na-P1, a composite of magnetite and Na-P1. By mixing soil with the magnetized Na-P1, with the mass ratio of 10:1, in ammonium oxalate solution for 10 min, more than 80% of radioactive Cs was removed from soil. Important factors for the successful removal of radioactive Cs from soils were preparation of solid composite with no separation of magnetite and Na-P1 during the mixing, optimization of the structure of magnetic separator which separate soil and magnetized Na-P1, and the selection of solution in the mixing procedure.

Key Words: Decontamination Technique, Composite Material of Na-P1 Type Zeolite and Magnetite, Radioactive Cs in Soil