

PIXE analysis of atmospheric deposition samples

H. Fujiwara¹ and K. Sera²

¹National Institute for Agro-Environmental Sciences
3-1-3 Kannondai, Tsukuba, Ibaraki 305-8604, Japan

²Cyclotron Research Center, Iwate Medical University
348-58 Tomegamori, Takizawa, Iwate 020-0603, Japan

Abstract

PIXE was applied for this multi-element analysis of atmospheric deposition samples collected at a fixed location in Fukushima Prefecture. In this study, palladium-carbon powder was used as the internal standard and well mixed with each sample. The mixture was fixed on backing material as the target exposed to an ion beam. Moreover, atmospheric deposition of radioactive cesium was determined by gamma spectrometry using a HPGe detector. The deposition amounts of Cl, Na, Si and Al presented the contributions of sea-salt aerosols and soil particles. However, the deposition amount of radioactive cesium was unrelated to that of the above elements. This result has suggested that the origin of radioactive cesium is likely to be different from the sea and the soil in the vicinity of the observation site.