

PIXE analysis of ecological samples collected around the Shijyushida dam

Keiko Chiba¹, Kazuhiro Yamada², Akira Hiratsuka², Masatoshi Yui²,
Teruyuki Umita³ and Kouichiro Sera⁴

¹Science of Living Department, Morioka Junior College, Iwate Prefectural University
152-52 Sugo, Takizawa, Iwate 020-0193, Japan

²Faculty of Policy Studies, Iwate Prefectural University
152-52 Sugo, Takizawa, Iwate 020-0193, Japan

³Faculty of Engineering, Iwate University
4-3-5 Ueda, Morioka, Iwate 020-8551, Japan

⁴Cyclotron Research Center, Iwate Medical University
348-58 Tomegamori, Takizawa, Iwate 020-0173, Japan

Abstract

It was well known that the mineral polluted water containing a lot of arsenic flowed and arsenic and other toxic elements were accumulated in the deep layer at the Shijyushida dam until 1982. In order to investigate toxic effects of arsenic for the ecosystem around the dam, we have collected several kinds of ecological samples from 2005 to 2007. The collected samples were analyzed by the PIXE method. As a result, it was not found that the toxic effect of arsenic for food chain system between *Pandion haliaetus* (bird of prey as a predator) and fishes (as a pray). On the other hand, arsenic was detected from a part of subterranean stem or root of plants. It was suggested that arsenic was accumulated in the shallow layer of underground at Shijyushida dam.