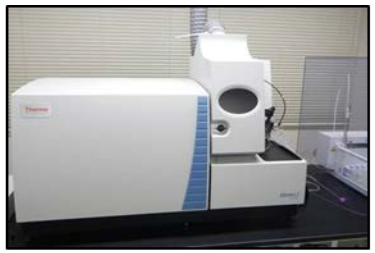
Faculty of Science and Technology
Tokushima University

Inorganic analytical chemistry of trace elements in natural samples

Associate Professor Yuhei, Yamamoto

ICP-MS with CCT

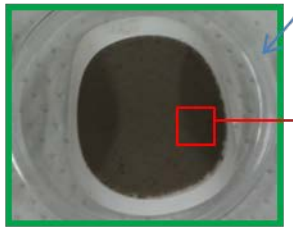


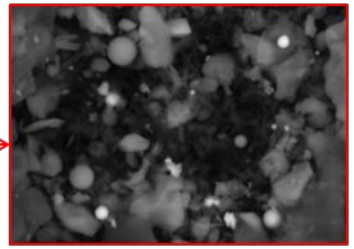
Limit of detection is lower than several ng/L.

river colloids on a membrane

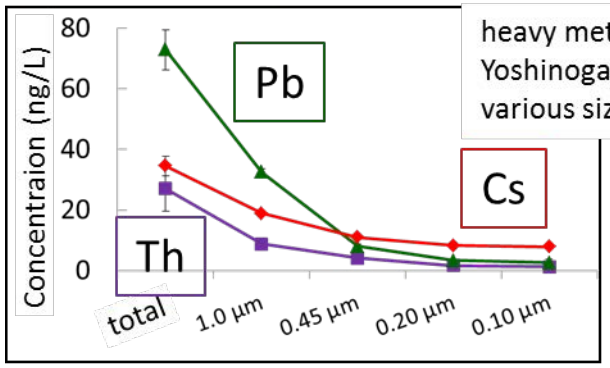
aerosols in rime on a membrane

various shapes of aerosols in rime





SEM image



heavy metals in Yoshinogawa river at various size fraction

concentrations of heavy metals depend on size fraction

Content:

Natural samples are mixture of various elements, and the elemental composition is one the important controlling factor of chemical character of natural samples. Because heavy metals are often toxic elements even at a low concentration, understanding of behavior of heavy metals is important. To determine concentration of heavy metals in natural samples, chemical analyses is conducted using ICP-MS.

There are very small particles with a size from μm to nm order in natural water and air, which are called “colloid” and ”aerosol”. Heavy metals can adsorb onto these particles. Focusing on trace elements and small particles, natural sample (river water, groundwater, sea water, rain, snow, rime, air, and rock), various analyses have been conducted. In addition, development of analytical method for trace elements in natural sample is also research target.

Keywords : heavy metals, colloid, aerosol, natural sample

E-mail: yamamoto.yuhei@tokushima-u.ac.jp
Tel. +81-88-656-7249
Fax: +81-88-656-7249
HP : http://web.ias.tokushima-u.ac.jp/ac-lab/chem