

## **Tracing the Pb origin using stable Pb isotope ratios in surface sediments of the Korean coast of Yellow sea**

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In order to investigate the controlling factor and sources of Pb in coastal sediments in the Yellow Sea, 88 surface and six core sediments were collected and analysed for Pb concentration (1M HCl leached and residual fractions) and stable Pb isotopes ( $^{207}\text{Pb}/^{206}\text{Pb}$ ,  $^{208}\text{Pb}/^{206}\text{Pb}$ ) using MC-ICP-MS.

Leached Pb concentration varied in the range of 3.8-28.8mg/kg (mean 11.3mg/kg) and showed the highest concentration in the fine-grained sediments and seemed to be associated with Fe oxide/hydroxide. Residual Pb concentration seemed to be related to minerals in coarse-sized grains [1].

$^{207}\text{Pb}/^{206}\text{Pb}$  and  $^{208}\text{Pb}/^{206}\text{Pb}$  varied in the range of 0.844-0.851 and 2.102-2.118, respectively. Pb isotope ratios decreased from the northern part toward the southern part. Based on the ratio-ratio, and ratio versus the inverse of Pb concentration plots, the spatial distributions of isotopes were responsible for the mixing between Han River borne polluted and unpolluted endmembers in the northern part, and the mixing between the materials from the Geum River and offshore in the southern part [2].

This study suggested that Pb isotopes could be a good candidate of tracers discriminating the material sources in the coastal areas with multiple sources of Pb.

[1] Kim et al., (2000) JKSO 35, 179-191

[2] Choi et al., (2007) Mar. Chem. 107, 255-274