

Distribution of heavy metals in core marine sediments of coastal East Malaysia by instrumental neutron activation analysis and inductively coupled plasma spectroscopy

ABSTRACT

Fifty-five core marine sediments from three locations at South China Sea and one location each at Sulu Sea and Sulawesi Sea of coastal East Malaysia were analyzed for heavy metals by instrumental neutron activation analysis and inductively coupled plasma mass spectroscopy. The enrichment factor and the modified degree of contamination were used to calculate the anthropogenic and pollution status of the elements in the samples. The enrichment factor of As, Cd, Cr, Cu, Ni, Pb, and Zn varied from 0.42-4.26, 0.50-2.34, 0.31-0.82, 0.20-0.61, 0.91-1.92, 0.23-1.52, and 0.90-1.28, respectively, with the modified degree of contamination values below 0.6. Comparative data showed that coastal East Malaysia has low levels of contamination.

Keyword: INAA and ICP-MS method; Core marine sediments; Heavy metals; Enrichment factor; Modified degree of contamination; East Malaysia