

Dual Structure of Ferromanganese Crusts in the Pacific Seamounts: Significance as Resources and Paleoceanographic Record

Keisuke Nishi^{1*}, Akira Usui¹, Nakasato Yoshio¹, Ian Graham²

¹Kochi University, ²Geological and Nuclear science

We found a wide-spread frequent distribution of Co-rich ferromanganese crusts with marked dual structure; top earthy brownish crusts and underlain submetallic hard and brittle crusts in the central and northwestern Pacific seamounts. The area includes the Marshall-Wake-Marcus-Bonin Islands. Our fine-scale Be-isotope dating, chemical analysis, XRD, microscopic structural analysis revealed clear difference in major and minor metallic elements. The younger layer is rich in Fe, Si, Al, Co, but depleted in P, but vice versa in the older layer. The boundary is approximately 12-15Ma base on Be data. Thus this marked change in the microstratigraphic section may related with changes in oceanographic and geological environment in the Neogene time.

Keywords: ferromanganese crust, mineral resource, NW pacific, marine environment, seamount