**Uranium-Bearing Minerals of the Black Slate in the Okcheon Metamorphic Belt, South Korea**

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Black slate in the Okcheon metamorphic belt (OMB) has been considered prospective for uranium ore in South Korea. In this study, three representative areas, Goesan, Geumsan, and Miwon, were selected to better understand uranium mineralogy and geochemistry of black slate in the OMB. The OMB black slate is highly enriched with U (~0.03%), V (~0.3%), Ba (~1.4%), and Mo (~0.04%). It is also notable that total organic carbon (TOC) is as high as 21.2 %. Barium shows a weak correlation with TOC while U, Mo, Cu, P, and V show a strong correlation. Comparison of the three study areas, shows the average concentrations of Ba, U, and Mo and organic carbon decrease in the following order: Goesan > Geumsan > Miwon.

Four uranium-bearing minerals in the OMB black slate have been identified. Tetravalent uranium ($U^{4+}$) minerals such as uraninite and brannerite are most common; francevillite and Ba-bearing torbernite containing hexavalent-uranium ($U^{6+}$) have also been observed. Uraninite and brannerite are less than 100 μm in dimension. In contrast, the size of francevillite or torbernite is larger, and these minerals have a scaly texture with cracks. We also note that uraninite is the most common uranium mineral throughout the black slate bed in OMB.