

Mineralogical characteristics of the fault rocks and fault re-activation ages of the Yangsan fault in the Yeonghae area

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Mineralogical characteristics of fault rocks and fault re-activation ages were investigated for fault activation age and activation environment. The fault activation ages of the Yangsan fault in the Yeonghae area through the Illite K-Ar age dating was determined by the age value of 45.5 ± 1.1 Ma, 50.9 ± 1.2 Ma, 58.2 ± 1.3 Ma, 60.8 ± 1.4 Ma, 65.3 ± 1.6 Ma, 66.8 ± 1.5 Ma, 67.1 ± 1.5 Ma, 75.1 ± 1.7 Ma. Among them, the R1 I/S type illite was nucleated at the oldest age of 75.1 ± 1.7 Ma. Compared to Illite (PCI), it can be seen that it was affected by low temperature hydrothermal fluid. However, it is difficult to accurately determine the temperature at which illite is formed. Research was conducted to understand the formation temperature of carbonate minerals by utilizing the Clumped Isotope Paleothermometry of carbonate minerals. U-Pb Age dating studies on carbonate minerals are also being actively conducted. Using these two methods, we will determine the formation temperature and formation age of the authentic carbonate in the fault rock. This seems to contribute significantly to revealing the history of fault movement.