

Removing clays from carbonate rocks by ultrasonic assisted elutriation

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The rare earth elements (REEs) of sedimentary carbonate rocks are the best parameters to trace the redox conditions of sedimentary environment. However, because the REEs contents of authigenic carbonate minerals are much lower than that of terrigenous clays, a small quantity of terrigenous clays dissolved from carbonate rocks will affect true the redox implication.

In order to achieve elimination of clays in carbonate rocks, the ultrasonic assisted elutriation for clay in multiple samples was proposed. The results show that the clays are washed out effectively(Fig.1). At the same time, the results of the elements of elutriation samples, especially the characteristic element Al of clays, were determined by ICP-AES. The results show that the clays are washed out effectively too(Fig.2). The two results show that ultrasonic elutriation technology can effectively remove the terrigenous clay from the carbonate rock and improve the measurement accuracy of REEs of carbonate minerals in carbonate rocks.

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