

Application of heavy minerals in Provenance interpretation of siliciclastics in Oman continental shelf, Chabahar to Jask area

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Abstract: Recognition of heavy minerals in Oman continental shelf sediments and their application for interpretation of sediments source rock is the purpose of this study. Seven core samples of sea sediment and three surface samples from tidal flat area have been examined. Heavy minerals are dense grains, which are found not only in rocks, but also in different types of sand and sediments. Separation of heavy minerals was conducted by heavy liquid of bromoform. Separated heavy minerals were studied by using binocular microscope and SEM equipped with EDS analyser. Various heavy minerals of zircon, garnet, tourmaline, rutile, barite, apatite, hornblende, ilmenite and magnetite were recognized in studied sediment. The high abundance of zircon, apatite and tourmaline in sediments indicates the felsic rocks as origin. Hornblende was eroded from ophiolite in subducted zones. The quartz–felsic rocks are likely to be the main source for sediments, which are common in back arc zone of Makran subduction.

Keywords: Heavy mineral; source rock; hornblende; zircon; apatite; tourmaline.

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