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Title of Thesis: Geology of the Younger Granitoids in the Extreme Northern Part of the Pan- African Belt

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Abstract:

The present study deals with the geology and mineralization of the younger granites in the extreme northern part of the Pan- African belt. Two study areas were selected to represent the beginning of the extreme north and other the end of the extreme northern part, located in the Eastern Desert of Egypt. They are Gharib area that is located close to Ras Gharib city, with coordinates 28° 15' 32" , 28° 03' 04"N and 32° 59' 51", 32° 33' 20"E, and Gattar area that is located close to Hurgada city, with coordinates 27° 05' 00", 26° 55' 00"N and 33° 15' 00", 33° 25' 00" E. Studying the geology and mineralization of the selected areas was carried out using different methods, remote sensing technique, field work, petrology, and geochemistry. by using remote sensing technique in addition to field observations two geologic maps were updated to the study areas, ASTER image is used to establish the geologic map through classification methods and spectral profiles for the two areas. Also, ASTER scene is used in making hydrothermal -vein detection for mineral exploration by band ratio maps. Band ratio maps, petrographic investigation and chemical analysis, detect that Gharib area contains gold mineralization. Field observation, petrographic and geochemical examinations show that Gharib area contains 4 phases of younger granite, while Gattar pluton contains 2 phases but in 2 different tectonic setting as it was confirmed from the geochemical international diagrams. Plotting chemical data for the younger granites show that the magma of

Keywords:

Pan-african; Gold; Remote sensing; ASTER image.