**Geology of Iron Ores in Arabic Countries and importance its study by Remote Sensing Techniques**

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 **ABSTRACT**

The iron ore deposits are present in many of the Arab countries, in particular Mauritania, Algeria, Egypt, Morocco, Tunisia, Saudi Arabia, Libya, Yemen, Syria and Lebanon. With reserve more than 14 Billion tons . This study indicate to the main Ore characteristics and importance investigate by R.S .techniques. The Ores in Arabic Countries Returning to the four main origins, Magmatic ,Metamorphic ,Hydrothermal and Sedimentary .

The subject of this research is the use of satellite images in studying, the formation of hydrothermal iron deposits in the Zabadani Area in Syria as an example of the possibility of using it in other regions of the Arab countries. The following methodology was adopted:

1-Collec data, maps and ASTER satellite images available for the region.

2-Geographic and radiometric correction and image processing,3- Field check

4- Determining the most effective spectral ranges for detecting iron minerals

5- Relying on the spectral library in the comparison

The following results were obtained: The 14-band ASTER satellite images are useful for detecting both metallic and non-metallic minerals, compared to other satellite images

The evidence we have adopted is effective in detecting iron oxides, carbonate, Clay and siliceous minerals. The VNIR is useful in detecting hematite, the SWIR 5 is useful in identifying goethite, hydrogothite and magnetite, the range 8 is useful in identifying calcite and siderite.

The study showed that spectral bands 12 and 13 in ASTER images( TIR ) contribute to the detection of siliceous minerals associated with hydrothermal iron deposits.

Benefits of Remote Sensing data for Iron Ore Exploration , Cost-Effectiveness, Large areas Coverage, Speed, accuracy, Non-Destructive

**Key words:,** , Magmatic, Metamorphic, Sedimentary, Exploration, Maps

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