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شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم



شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الإلكتروني والميكرو فيلم

## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
على هذه الأفلام قد اعدت دون أية تغييرات



## يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of  
15 – 25c and relative humidity 20-40 %



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بالرسالة صفحات

لم ترد بالأصل



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بعض الوثائق

الأصلية تالفة

**APPLICATIONS OF GEOINFORMATION SYSTEMS AND  
REMOTE SENSING IN THE STUDY OF GEOLOGY  
AND AIRBORNE RADIOMETRY OF JEBEL  
UMM GHAYJ-JEBEL HUMMER WAJJAT  
AREA, CENTRAL EASTERN DESERT,  
EGYPT**

**A THESIS SUMMITTED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY  
OF SCIENCE IN GEOLOGY**

**BY**

**GAMAL ABD EL-AZIZ ABD EL-FATTAH SHEDID**

**(B. Sc. in Geology, 1984)**

**&**

**(M. Sc. in Geology, 1997)**

**Assist. Lecturer / Nuclear Materials Authority, Cairo, Egypt.**

**SUPERVISORS**

**Prof. Dr. MAHMOUD SAMY M. YOUSIF**

**Prof. of Geology, Faculty of Science**

**Ain Shams University,**

**Cairo, Egypt**

**Prof. Dr. ABDEL ATY B.**

**SALMAN**

**Prof. of Geology, Nuclear Materials**

**Authority, Cairo,**

**Egypt.**

**Prof. Dr. KLAUS-PETER**

**STANEK**

**Prof. of Geology, Technical University**

**Bergakademie of Freiberg,**

**Germany**

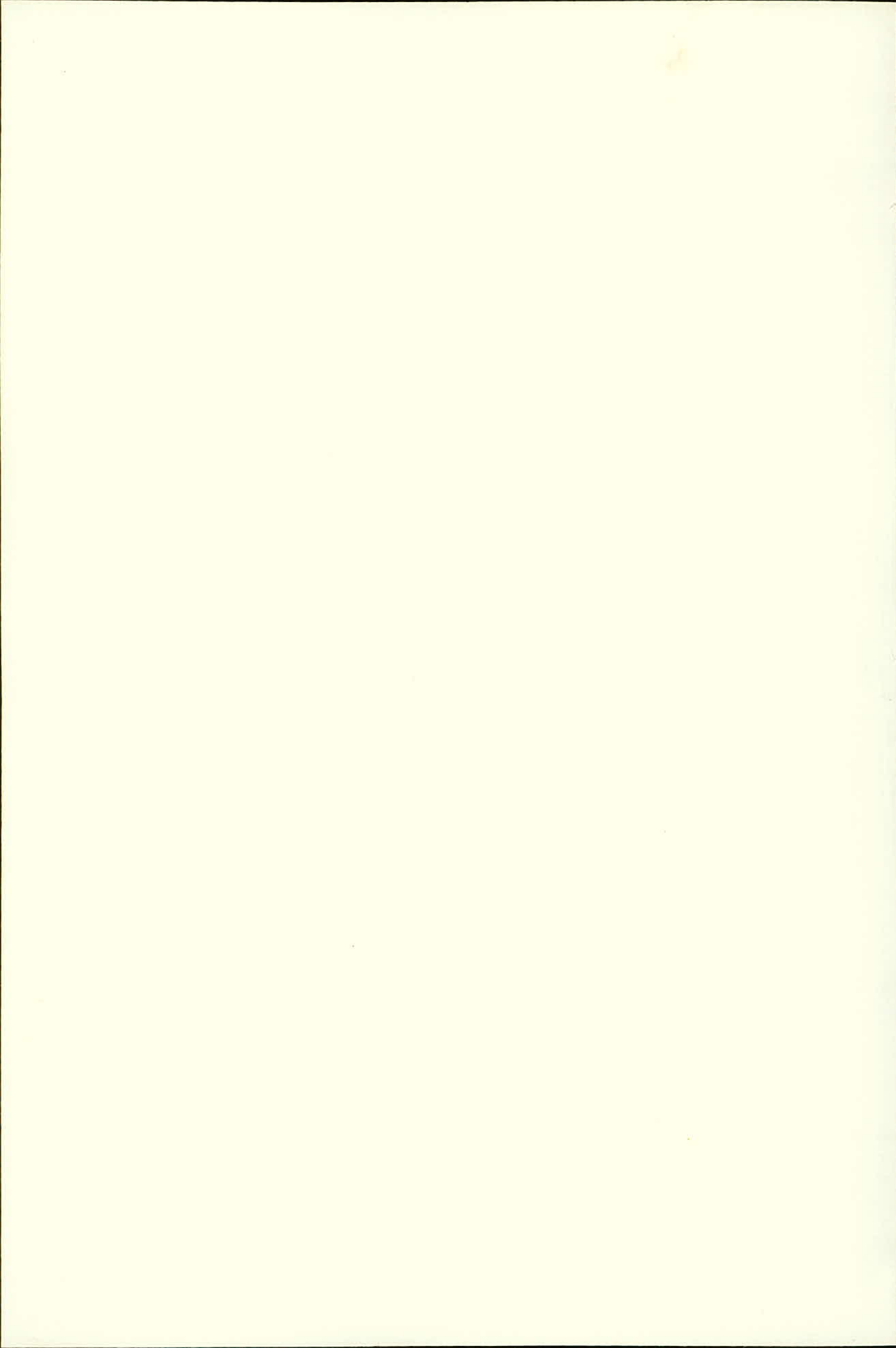
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**DEPARTMENT OF GEOLOGY**

**FACULTY OF SCIENCE**

**AIN SHAMS UNIVERSITY**

**September, 2001**



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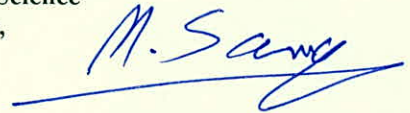
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Bergakademie of Freiberg,  
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## ABSTRACT

### **Gamal Abd El-Aziz Abd El-Fattah Shedid. APPLICATIONS OF GEOINFORMATION SYSTEMS AND REMOTE SENSING IN THE STUDY OF GEOLOGY AND AIRBORNE RADIOMETRY OF JEBEL UMM GHAYJ-JEBEL HUMMER WAJJAT AREA, CENTRAL EASTERN DESERT, EGYPT.**

The main purpose of this dissertation is to use the geoinformation systems (GIS), remote sensing and the integrated geological and geophysical data in a comprehensive interpretation to determine radiometric, spectral reflectance, and accurate spatial distribution characteristics of different rock units, as well as geologic units bearing radioactive ores.

The total studied area is 1763.75 Km<sup>2</sup> and the outcropping rocks cover an area of about 982.07 Km<sup>2</sup> represent about 55% of total area while the area of wadi deposits is 781.68 Km<sup>2</sup> represent about 45% of the total area of study.

The granitic rocks are isolated and discriminated at > 15 K%, > 40 ppm eTh, > 20 ppm eU, and > 50 M.R/h Tc isoline (iso) levels. Coarse-grained biotite granites and muscovite granites are isolated and discriminated at > 35 K%, > 80 ppm eTh, > 30 ppm eU, and > 80 M.R/h Tc isoline levels. There are only 3 areas record > 35 K% iso, J. Humr Wajjat, J. Al Unayji, and J. Umm Bakrah. There are only 2 areas record >200 ppm eTh iso, J. Humr Wajjat, J. Al Unayji. There are only 4 areas record > 100 ppm eU iso, J. Humr Wajjat and J. Al Unayji. There are only 4 areas record > 100 M.R/h Tc iso, J. Humr Wajjat, J. Al Unayji, J. Al Yatimah, and J. Umm Bakrah. The basic-ultrabasic, metasediment, and metavolcanic rocks are discriminated and isolated at < 15 K%, < 40 ppm eTh, < 30 ppm eU and < 40 M.R/h.

The TM images of different band ratios can prepared to be sensitive for the discrimination of basic-ultrabasic, granitic, metasediment and metavolcanic rocks as major units that can be divided into smaller units. They also yield accurate spatial distribution of geologic units that can be used in mapping and evaluation stages purposes.

The GIS processing of geological, geochemical, radiometric and remote sensing data are useful in mapping of different exposed rocks and determination of very important geologic rock units, which have high possibilities for hosting radioactive ores. The results of this study can be useful in nuclear ores exploration oriented plans in other areas.



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