سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

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التوثيق الالكتروني والميكروفيلم

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سامية محمد مصطفى

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

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سامية محمد مصطفى

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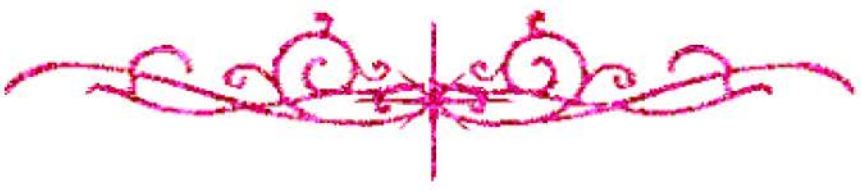

سامية محمد مصطفى

شبكة المعلومات الجامعية

بالرسالة صفحات لم ترد بالأصل

MINERALOGY AND GEOCHEMISTRY OF SOME PLACER MINERALS IN THE STREAM SEDIMENTS OF DAHAB AREA, SINAI, EGYPT.

By

Hala Mohamed Korany Mansour

In Partial Fulfillment of Requirements for the Degree of Master in Science (Geology)

Cairo
2003

Approval Sheet

Title of the M. Sc. Thesis:

MINERALOGY AND GEOCHEMISTRY OF SOME PLACER MINERALS IN THE STREAM SEDIMENTS OF DAHAB AREA, SINAI, EGYPT

Name of the candidate:
HALA MOHAMED KORANY MANSOUR

Submitted to
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Note

Beside the research work materialized in this thesis, the candidate has attended courses for one year in the following topics:

1. Igneous petrology
2. Metamorphic petrology
3. Ore mineralogy
4. Ore deposits
5. Rock-forming minerals
6. Geochemistry
7. X-ray and other techniques
8. Isotope geology
9. Clay minerals
10. Statistics
11. German language

She has successfully passed the final examinations of these courses in October 1998.

Prof. Ahmed A. El-Kammar

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ABSTRACT

The stream sediments of Dahab area, southeastern Sinai, Egypt were studied for their content of economic minerals. These sediments are immature as indicated by poor sorting and other mechanical parameters. They are derived from the Precambrian basement rocks, which are mostly represented by granitic rocks in addition to lesser amounts of volcanics and gabbros. The mineralogical investigation revealed that these sediments contain considerable amounts of placer gold, Fe-Ti oxides and zircon.

The concentrated Fe-Ti oxides comprise homogeneous magnetite and ilmenite in addition to ilmeno-magnetite, hemo-ilmenite and rutile-hematite intergrowths. Isodynamic separation of some raw samples (size ≤1mm) revealed that up to 15.12% magnetic minerals can be recovered. Zircon shows remarkable variations in morphology, colour, chemistry and provenance. U-poor and U-rich varieties of zircon were discriminated containing UO_2 in the ranges of 0.04-1.19 wt% and 3.05-3.68 wt%, respectively. REE-bearing minerals comprise monazite, allanite and La-cerianite.

On mineralogical basis, the present work suggests that Dahab stream sediments represent a promising target for further geochemical exploration for precious metals, especially gold. Fire assay data indicate that placer gold in some of the studied sediments sometimes reaches 15.34 g/t. It is supposed that the narrow gullies and valleys cutting the basement manifested the development and preservation of gold in this arid environment. Background concentration of gold and variation in lithology suggest multiple source of the metal in the investigated sediments.

CONTENTS

CHAPTER THREE: OPAQUE MINERALS