بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قَســـم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

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 %

بعض الـوثـــائق

الأصـلية تـالـفـــة

صفحات بالرسالة

لم ترد بالأصـــــل

chemistry

Menoufiya University
Faculty of Science
chemistry Department

Studies on Recovery of Rare Earth Element From Gatter "V" Mineralization Area

Thesis

Submitted to Faculty of Science, Menoufiya University in Partial Fulfillment for the Requirements of Master Degree of Science in Organic Chemistry

By

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2007

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Monazite is the mainly ore in Gatter (V) which is actually of world wide occurrence in beach and river sands and deposits. Gatter(V) area Egyptian with large deposit of potentially economic heavy minerals (black sand deposits)occurs along the Nile Delta recent shore line (along Mediterranean coast) in a zone extending from Rafah to Abo_Qir east of Alexandria .

Chemically, the mineral monazite of Gatter (V) is a rare earth and thorium phosphate and is considered actually as an important source for thorium and rare earth elements especially those of low atomic numbers (cerium group, La, Ce, Pr, Nd, Sm, Eu, and Gd). Digestion of monazite sand with concentrated solution of sodium hydroxides, after its separation as by product during the recovery of more abundant minerals by using a proper upgrading technique, has been developed and applied in Egypt to separate thorium and uranium in one cake by fractional precipitation and produce rare earth hydrous oxides cake . The objective of this work is to study of recovery of rare earth elements from their hydrous oxides cake taking into consideration the matter of economy by :

a- Collecting a wide literature covering the resources world production, resources processing, analysis applications and worldwide status of rare earth technology, to help in the foundation of the most successful direction for separation and determination of rare earth elements from monazite .

b- Utilizing a bench scale separation by applying a very simple separation techniques to understand the preliminary technical information for such systems.

c- Trying to apply new economic methods for separation.

d- Studying the most effective factors which determine and effect the separation process to asses the optimum conditions for further upscaling methodology .

e- Analyzing by different updated techniques which are increasing recommended to guide or control any separation project.

f- Orienting the present work towards the separation and recovery of pure Lanthanum, Cerium, Praseodynum and neodymium from rare earth hydrous oxides cake produced after alkali digestion of Egyptian monazite. This is fulfilled firstly by study of the relevant factors affecting the optimum conditions to separate such proposed elements from their processed natural dissolved oxides cake.

g- Suggesting a suitable flow sheet for separation of these elements from their natural dissolved mixture. Then proposing the most convenient condition for the final laboratory scale flow diagram. Manifests all essential technical data to asses a clear way for the progress in that. This may help in upscaling factor technological work in the rare earth elements separation and recovery from Egyptian monazite.

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