Faculty of Women for Arts,
Science and Education,
Ain Shams University

"Study of the environmental radioactive pollution using different spectroscopic technique of the Suez region, Egypt"

Thesis
Submitted in Fulfillment for M.Sc.
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To
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By

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Faculty of Women for Arts,
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A Thesis for M.Sc in Physics

Mona Abd –El Samei gouda Mansour

Title of Thesis

"Study of The Environmental Radiation Pollution using different Spectroscopic Technique of The Suez region in Egypt"

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Dedicated

To

My MOTHER,

My HUSBAND

and

My Sweet Daughter Dima

Abstract

ABSTRACT

The thesis aimed to focuses some light on studies of radioactive pollution of the Suez region Egypt using different spectroscopic technique.

Natural radiation arises in outer space, where cosmic rays are formed and on the earth where radionuclides present in soil, air, water and food. Other contributions depend strongly on human activities and practices, thus the Human exposure occurs by irradiation from different sources.

First, the concentration of the natural radionuclides in the studied samples were measured to find the specific radioactivity content of ^{238}U- series, ^{232}Th series and ^{40}K by using a high resolution gamma ray spectrometer based on coaxial HPGe detector shielded by cylinders of lead, copper and cadmium. The analysis of data is completed by using a computerized analyzer fitted with a high multichannel analyzer with high level software programs.

Second, radon has been measured by using solid state nuclear track detectors (CR-39). (SSNTDs) have been widely applied for the measurement of mean radon activities in human environments along the last decades because they have some important properties to be used as a detector like a good electrical insulator, stable when subjected to high doses of radiation and highly sensitive for α-particles.

Twenty six samples were collected from different factories in El Sokhna and Suez city, Egypt, which classified into three categories soil, sediment and leaves.