

# Radon measurements by etched track detectors - applications in radiation protection, earth sciences, and the environment

## **World Scientific - Study of Radionuclides and Radon Exhalation Rate in Soil and Sand Samples from Tiba, Luxor, Governorate**



Description: -

## Nuclear track detectors.

Radon -- Measurement -- Technique.Radon measurements by etched track detectors - applications in radiation protection, earth sciences, and the environment

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## **Study of Radionuclides and Radon Exhalation Rate in Soil and Sand Samples from Tiba, Luxor, Governorate**

Applied Radiation and Isotopes, 55, 853-860.

## **Radon Measurements By Etched Track Detectors**

It is a relative method of assay and has the merit of being simple and essentially non-destructive technique.

## Radon Measurements By Etched Track Detectors

Third, each sample has been placed in a plastic container, which was sealed to avoid the escape of  $^{222}\text{Rn}$  and  $^{220}\text{Rn}$  from the samples. The analysis of  $^{226}\text{Ra}$  and  $^{232}\text{Th}$  is based on the gamma-lines of the decay products in equilibrium with their parent nuclides.

## **Study of Radionuclides and Radon Exhalation Rate in Soil and Sand Samples from Tiba, Luxor, Governorate**

The radium equivalent activity R aeq , internal hazard indexes H in , external hazard indexes H ex , absorbed dose rate D and representative level index I , for all samples under studying soil-sand were 81.

## Radon Measurements By Etched Track Detectors

In this study, the natural radionuclides in soil and sand have been measured by using high purity germanium HPGe detector.

## Radon Measurements By Etched Track Detectors

Activity concentrations calculated from the intensity of several gamma-rays emitted by a nucleus are grouped together to produce a weighted average activity per nuclide. The activity concentrations have been calculated from the intensity of each line considering the size and mass of the sample, the branching ratio for the gamma-decay, and the efficiency of the detector.

### **Radon Measurements By Etched Track Detectors**

Signals produced by the gamma-ray detector are amplified, stored and displayed by the multichannel analyzer as well as the energy spectra, i. Applied Radiation and Isotopes, 51, 747-755.

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While the results of R aeq, I yr, H in, H ex and D are given in

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