

REPORT - WEBINAR ON

“Measurements of Gamma Radiation in indoor and outdoor”

DATE: 19/01/2022

BACKGROUND:

Department of Physics, School of Arts and Science, AV Campus, VMRF (DU) organized a Webinar on **“Measurements of Gamma Radiation in indoor and outdoor”** for Faculty members, Students & Industrial persons on 19/01/2022. Resource person of the webinar was **Dr. M. Paul Dinakaran M.Sc. M.Phil. Ph.D., Assistant Professor of Physics, Voorhees College, Vellore.**

OBJECTIVES :

- ❖ **Introduction to gamma rays**
- ❖ **Properties of gamma rays**
- ❖ **Difference between gamma rays and x-rays**
- ❖ **The health effects of exposure to gamma radiation**
- ❖ **Some common sources of gamma radiation**

The natural terrestrial gamma radiation dose rate is an important contribution to the average dose rate received by the world's population. Estimation of the radiation dose distribution is important in assessing the health risk to a population and serve as the reference in documenting changes to environmental radioactivity in soil due to anthropogenic activities. Human beings are exposed outdoors to the natural terrestrial radiation that originates predominantly from the upper 30 cm of the soil. Only radionuclides with half-lives comparable



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with the age of the earth or their corresponding decay products existing in terrestrial material such as ^{232}Th , ^{238}U and ^{40}K are of great interest. Since these radionuclides are not uniformly distributed, the knowledge of their distribution in soil and rock play an important role in radiation protection and measurement. Gamma radiation from these represents the main external source of irradiation to the human body and the concentrations of these radionuclides in soil are determined by the radioactivity of the rock and also nature of the process of the formation of the soils. Therefore, radionuclides in soil generate a significant component of the background radiation exposure to the population. To measure the specific activity and γ - ray absorbed doses of the naturally occurring radionuclides (^{238}U , ^{232}Th and ^{40}K) in different types of soils from Vellore (Tamil Nadu) using γ - ray spectrometry. This was accomplished through the following types of measurements: radionuclide activity concentrations in surface soil, outdoor gamma absorbed doses and the external hazard index (H_{ex}) for Vellore.

AGENDA

Program comparing was done by **Ms. P. Angeline (III B.Sc. Physics)**. Welcome address was given by **Dr. SE. Allen Moses, HoD of Physics**. The presidential address was given by **Dr. K. Manivannan**, Director SAS. The speaker Introduction was given by **Dr. P. Nagaraju, Assistant Professor of Physics**. Finally the vote of thanks was given by **Ms. M.Kayalvizhi (III B.Sc. Physics)**.



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WEBINAR DETAILS:

The webinar “**Measurements of Gamma Radiation in indoor and outdoor**” was conducted using the **Zoom Meeting ID : 8652406 5809 Passcode : VMRF**

SOME GLIMPSES OF THE WEBINAR

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DEPARTMENT OF PHYSICS
 CORDIALLY INVITES YOU ALL FOR THE WEBINAR ON

MEASUREMENTS OF GAMMA RADIATION IN INDOOR AND OUTDOOR

EXPERT SPEAKER :
Dr. M. PAUL DINAKARAN, M.Sc., M.Phil., PhD
 Assistant Professor, Department of Physics,
 Voorhees College, Vellore

DATE : 19-01-2022 (WEDNESDAY), TIME : 10.30 AM

Dr. K. MANIVANNAN,
 Director, SAS

Dr. SE. ALLEN MOSES
 HoD, Department of Physics

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