

Gamma Spectroscopy Laboratory

Gamma Spectroscopy Laboratory is centered around providing Nuclear Analytical Services based on detection of gamma rays emitted from radionuclides both natural and artificial. Following a very highly standard set of techniques, the laboratory is capable of catering the analytical demand of the country by fulfilling commercial, regulatory and R & D requirements of radioactivity analysis, measurement and reporting.

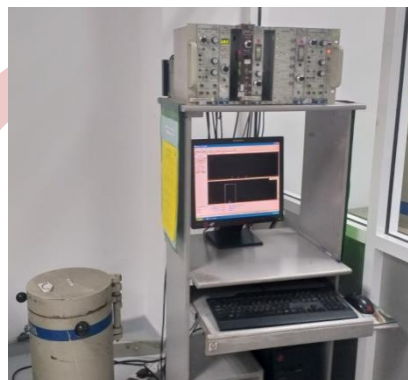


We are determined to make the SLAEB the centre of excellence in Radioactivity measurement for safety of our foods and Environment in the country. Encompassing a multidisciplinary team of experienced scientists, we provide services for radioactivity analysis in a highly quality assured environment compliant with **ISO/IEC 17025 standards since 2006.**



The Gamma Spectroscopy Technique

Gamma rays are a type of electromagnetic radiation with ionizing capability, emitted by almost all radionuclides found in the environment. The major purpose of Gamma Spectroscopy is to detect these radionuclides in food and other materials, without the need of chemical separation. It identifies radionuclides in materials based on the energy of the gamma radiation emitted, as a signature and measures the amount of ionizing radiation that may cause health hazards.



NaI(Tl) based Food Screening Detector System.

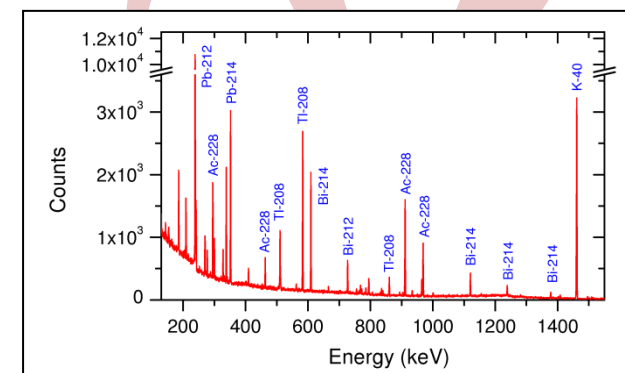
Application of Gamma Spectroscopy.

Ionizing radiation due to naturally found radionuclides in the environment is not hazardous to humans. However artificial processes such industrial activities or nuclear hazards can introduce radionuclides to the environment increasing radiation levels above safety levels set by scientific research and accepted internationally. This may cause serious radiation health hazards to the public.

Therefore, gamma spectroscopy is used as a versatile solution for detecting such radionuclides in consumer food items, soil and water in suspected contaminated areas for evaluating harmful radiation levels. The technique can also be applied in various R&D activities in environmental, medical, agricultural and industrial fields.

Analytical Facilities

- Sodium Iodide Detector Systems (NaI) – Four Systems
- High Pure Germanium Detector Systems (HPGe) – Two Systems
- Ultra-Low Background - High Pure Germanium Detector Systems (ULB-HPGe) – One System



Typical Gamma ray spectrum

As per government regulations laid down by Regulatory Authority for Consumer Protection LD-B36/73-1995.07.21, the amount of radiation caused by Cs-137 should be assured to be less than 20Bq/kg for milk powder and 100Bq/kg for other foods.

Advantages of Gamma Technique

- Multi Radioactive Isotope Analysis
- Maximum Accuracy
- Low cost
- Internationally accepted technique.
- Different sample matrices

Our Services

- Issuance of radioactivity analytical certificates for milk powder and milk-based product (imported milk) samples.
- Issuance of radioactivity analytical certificates for tea, spices, desiccated coconut and other samples etc. (for export purpose)
- Issuance of detailed radioactivity analytical certificates for soil, sediments, minerals, water and biological samples.
- Testing of radioactive contamination in different sample matrices.



HPGe detector systems

Other Special services

- Consultancy Technical Support for Environmental sample monitoring for Radioactivity.
- Designing and conducting Research programmes in the field of Radioactivity monitoring
- Providing training and technical assistance to the University students for their studies and research work.
- Conducting Customer awareness programmes with regards to the Radioactivity measurement in the commercial field.
- Measurement of Radioactivity of local milk & milk-based products, fish and environmental objects for making baseline background radioactivity parameters.

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Sri Lanka Atomic Energy Board (SLAEB)

Life Sciences Division

Nuclear Analytical Techniques

Gamma Spectroscopy Radioactivity Analysis

