Name of Machine	High Purity Germanium Detector
Make Million Technologies, Canberra Industries, U.S.A	**Model** N-Type Coaxial Detector, GR 2018 Detector model

Specification

- Energy range from 40 keV to >10 MeV
- High resolution - good peak shape
- Excellent timing resolution
- High energy rate capability
- Equipped with Intelligent Preamplifier
- Diode FET protection
- Warm-up/HV shutdown
- USB 2.0 Serial Interface

Working principle:

Germanium detectors are semiconductor diodes having a p-i-n structure in which the intrinsic (I) region is sensitive to ionizing radiation, particularly x rays and gamma rays. Under reverse bias, an electric field extends across the intrinsic or depleted region. When photons interact with the material within the depleted volume of a detector, charge carriers (holes and electrons) are produced and are swept by the electric field to the P and N electrodes. This charge, which is in proportion to the energy deposited in the detector by the incoming photon, is converted into a voltage pulse by an integral charge sensitive preamplifier.

Application

For dose rate measurement (Radioactive mineral concentrations)

User Instruction

The samples must be collected as per the instructions and method given in Morthekai and Ali, 2014. "Luminescence Dating Using Quartz-for End Users, Gond. Geol. Mag., V. 29".

Contact Person

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