Assay of alpha bearing waste is mandatory before its disposal to waste management facilities

Conventional Methods:
- Gamma spectrometry
- Neutron based assay techniques.

Gamma spectrometry - Limitation w.r.t Pu detection in high beta-gamma activity
- BF$_3$ is preferred due to its high gamma tolerance.

A BF$_3$ based passive waste assay system has installed in RML at IGCAR for waste assay
- consists of 16 BF$_3$ detectors - Arranged in a circular geometry with associated nuclear electronics
- Detectors test: Using Am-Be neutron source
  - Bias Voltage & Operating Voltage optimized.
- Gamma tolerance test: Using $^{60}$Co gamma source
  - Tolerance up to 0.1 Sv/hr
- Performance tests:
  - Long term counting stability & efficiency test
  - Good statistical performance.
- Waste drums were assayed & dispatched to waste management facility since 2013.