

3.1-P04. Achieving lower detection limits with the SAGe Well detector for a variety of samples relevant to On Site Inspection

CANBERRA's Small Anode Germanium (SAGe) Well detector is a new type of low capacitance germanium well detector manufactured using small anode technology. The detector has energy resolution performance similar to semi-planar detectors, and offers significant improvement over the existing Coaxial and Well detectors. Mathematical efficiency calibration using ISOCS/LabSOCS framework offers great flexibility for different sample sizes and shapes. Automatic true coincidence summing correction for a wide variety of nuclides, including the most common fission products, can be applied to measured spectra using the standard Genie 2000 algorithm. The performance of this detector and the true coincidence correction algorithm have been evaluated for a range of sample sizes and geometries counted inside the well and on the end cap of the detector. The improved resolution performance of SAGe Well detector greatly enhances detection sensitivity and offers benefits in measuring OSI relevant radionuclides in a variety of sample holders delivering reductions in minimum detectable concentration over the existing traditional Well detector.

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