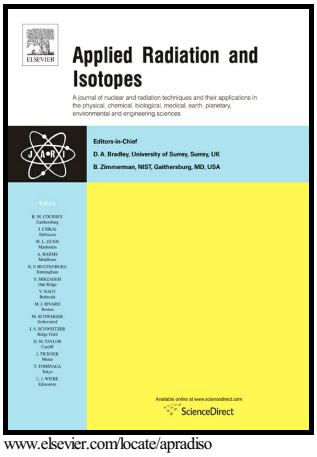

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A portable real-time in situ gamma-ray analysis system

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ABSTRACT

A portable $CeBr_3$ based gamma-ray detection system was designed and built for rapid turnaround, high throughput, real-time, and in situ sample analysis. The new technique allows automated data transmission from the field unit to a central laboratory controller to ensure laboratory quality of the data collected by field users without gamma-ray spectroscopy expertise. The method validation data indicates that the system's data quality objectives are adequate for radiological or nuclear emergency response or targeted surveillance programs where gamma-ray analysis is needed.

Key Words: Emergency response; Gamma-ray analysis; High throughput; Laboratory quality; Portable; Rapid turnaround