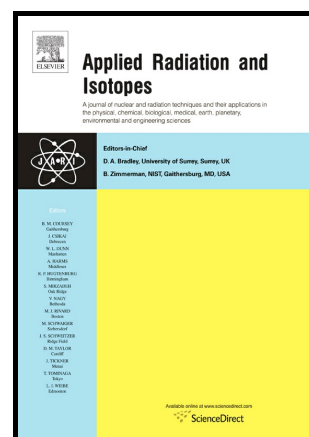


# Author's Accepted Manuscript

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www.elsevier.com/locate/apradiso

PII: S0969-8043(17)30471-2  
DOI: <http://dx.doi.org/10.1016/j.apradiso.2017.07.063>  
Reference: ARI8015

To appear in: *Applied Radiation and Isotopes*

Received date: 6 April 2017  
Revised date: 19 July 2017  
Accepted date: 31 July 2017

Cite this article as: Cong Wei, Kelly Garnick, Thomas Scott, Elon Malkin, Jennifer Szymanski, Steve Laskos, Jeffrey Raimondi, James Cocks, Kara Morris, Wilhelm Mueller and James Zickefoose, A portable real-time in situ gamma-ray analysis system, *Applied Radiation and Isotopes*, <http://dx.doi.org/10.1016/j.apradiso.2017.07.063>

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

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## ABSTRACT

A portable CeBr<sub>3</sub> 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

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