

**Development of a Hand-Portable Mass Spectrometer for  
Nonproliferation/Safeguards Applications**

**William B. Whitten, Peter T. A. Reilly, Guido F. Verbeck IV, and Jeremy Moxom**  
**Oak Ridge National Laboratory**  
**Oak Ridge, Tennessee, USA 37831-6142**  
[whittenwb@ornl.gov](mailto:whittenwb@ornl.gov)

We are developing a fieldable, battery-powered mass spectrometer based on miniature ion trap technology. A particular application we are addressing is the isotopic analysis of  $\text{UF}_6$ . One of the challenges being faced is to extend the mass range while maintaining the mass resolution required for accurate isotope ratio determinations. Another is the chemical reactivity of  $\text{UF}_6$  that places additional restrictions on the components of the mass analyzer. Results of experiments at the ORNL  $\text{UF}_6$  test loop and with nonradiological surrogates will be reported.

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