

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

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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 UF₆. 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 UF₆ that places additional restrictions on the components of the mass analyzer. Results of experiments at the ORNL UF₆ test loop and with nonradiological surrogates will be reported.

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