

Mass Spectrometry of UF₆ in a Micro Ion Trap

William B. Whitten, Peter T. A. Reilly, Guido Verbeck, and J. Michael Ramsey
Oak Ridge National Laboratory
Oak Ridge, Tennessee, USA 37831-6142
whittenwb@ornl.gov

We have been exploring the miniaturization of ion trap mass spectrometry with cylindrical ion traps as small as 0.5 mm. One application we are addressing is the isotopic analysis of UF₆. Besides the usual problems of mass resolution and instrumental sensitivity, the chemical reactivity of UF₆ adds additional restrictions on construction materials, ionization sources, and detectors. Results of experiments at the ORNL UF₆ test loop will be reported.

Research sponsored by the U.S. Department of Energy, National Nuclear Security Administration, under contract DE-AC05-00OR22725 with Oak Ridge National Laboratory, managed and operated by UT-Battelle, LLC.