

Abstract Submitted  
for the DNP06 Meeting of  
The American Physical Society

**Understanding Release from Actinide Targets – Recent Results from RIB Development** ANDREAS KRONENBERG, H.K. CARTER, E.H. SPEJEWski, Oak Ridge Associated Universities, D.W. STRACENER, Oak Ridge National Laboratory, OAK RIDGE ASSOCIATED UNIVERSITIES TEAM — Development of ion beams of short-lived isotopes is crucial for modern nuclear structure and nuclear astrophysics. The Holifield Radioactive Ion Beam Facility at Oak Ridge National Laboratory uses the ISOL (Isotope Separation Online) technique to provide radioactive ion beams. So far, uranium carbide has been used as a target to produce neutron-rich fission fragments. Thermodynamic calculations indicate the possibility of in-situ chemical side band formations of volatile species of refractory metals, such as V and Re. These elements release out of oxide targets after production in a nuclear reaction, and can occur only through in-situ formation of their volatile oxide. These have been confirmed experimentally. The results from recent, more detailed investigations of ThO<sub>2</sub>, UB<sub>4</sub> and other actinide targets as well as conclusions from systematic studies will be presented. This research was sponsored by the NNSA under Stewardship Science Academic Alliance program through DOE Cooperative Agreement # DE-FC03-3NA00143.

Andreas Kronenberg  
Oak Ridge Associated Universities

Date submitted: 05 Jul 2006

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