

# The Oak Ridge Isomer Separator and Spectrometer: ORISS

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ORISS is an electrostatic high-resolution isobar and isomer separator and spectrometer, which will provide isobarically pure beams for decay spectroscopy of exotic nuclei. ORISS is presently being developed at the Holifield Radioactive Ion Beam Facility (HRIBF) of ORNL. It consists of and radiofrequency quadrupole ion cooler and buncher with low beam emittance, a multi-pass time-of-flight mass spectrometer, and a time-of-flight detector to register time-of-flight spectra, or alternatively, a Bradbury-Nielsen ion gate to physically separate isobars and isomers of interest. Ion bunches as short as 8 ns (FWHM) have been produced in the cooler and buncher, a mass resolving power of 110,000 (FWHM) was achieved in the multi-pass time-of-flight spectrometer, and a Bradbury Nielsen gate with transition times of about 15 ns between the open and closed states was built. These experimental results and results of ion optical calculations predict an optical limit mass resolving power of about 400,000 and a transmission of better than 50% for the completed ORISS system. The present status of the system as well as its future applications at the HRIBF will be reported.

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