

Abstract Submitted
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Electron Population Manipulation of Transition Metal Isotopes in an RFQ Ion Trap¹ JEREMY LANTIS, Michigan State University, K. MINAMISONO, D. GARAND, National Superconducting Cyclotron Laboratory, C. KALMAN, N. KASARANENI, Michigan State University, K. KOENIG, National Superconducting Cyclotron Laboratory, Y. LIU, Facility for Rare Isotope Beams, A. MILLER, S. PINEDA, R. POWEL, J. ZUZELSKI, Michigan State University — Collinear laser spectroscopy (CLS) is commonly used for determination of the charge radii and electromagnetic moments of rare isotopes. However, the first and second-row transition metal elements have proven difficult to study with CLS due to low production rates and inaccessible electronic transitions. An electronic population manipulation technique using optical pumping in an RFQ ion trap has been developed at the BECOLA facility at the NSCL/MSU to enable the study of transition metal isotopes. The optical pumping technique was demonstrated using stable ^{90}Zr ions captured in an RFQ ion trap. Pulsed laser light irradiated the ions for population manipulation followed by laser-resonant fluorescence (CLS) measurements. Details of the technique and performance characteristics will be discussed.

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