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Offline Ion Source Developments for the BECOLA Facility at NSCL[1] ANDREW KLOSE, Department of Chemistry Michigan State University/NSCL, PAUL MANTICA, Department of Chemistry, Michigan State University/NSCL, KEI MINAMISONO, National Superconducting Cyclotron Laboratory
— Singly-charged beams of the stable isotope(s) of K, Ca, Mn, and Fe have been produced using either a commercial plasma ion source or a home-built electron ionization source for the BEam COoler and LAser spectroscopy (BECOLA) facility at the National Superconducting Cyclotron Laboratory (NSCL) at Michigan State University. For each element, collinear laser spectroscopy was performed to confirm the presence of the respective element. Production of stable ion beams for a given element is necessary to obtain reference hyperfine spectra of species with known electromagnetic moments before such nuclear properties can be deduced from the laser hyperfine-structure measurements of rare isotopes that are planned at NSCL. The results from the commissioning tests of the plasma and electron ionization sources will be presented, and development of a new Penning Ion Gauge (PIG) ion source will be discussed.

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Andrew Klose
Department of Chemistry, Michigan State University/NSCL

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