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Development of an electron impact ionization source for the CHIP-TRAP apparatus¹ MADHAWA HORANA GAMAGE, RAMESH BHANDARI, NADEESHA GAMAGE, RACHEL SANDLER, MATTHEW REDSHAW, Central Michigan University — At Central Michigan University, we are developing a high-precision Penning trap (CHIP-TRAP) for precise mass measurements with stable and long-lived isotopes. Ions will be produced using external ion sources and then transported to the Penning trap at low-energy using electrostatic ion optics. Ion sources that will be utilized with CHIP-TRAP include a laser ablation ion source (LAS) that has already been commissioned, and a low current electron impact ionization (EII) source that is currently being developed. The LAS enables ion production from solid targets, while the EII source will enable ion production from gaseous samples. The EII source is a Penning ion generator style source, consisting of a permanent neodymium ring magnet, cylindrical Penning trap, and low current thermal emitter. Ions will be produced via EII of gas admitted into the trapping region, then released in a bunch and transported to the CHIP-TRAP beam line. In this poster we will describe simulations and the design of the EII source and report on the status of its construction and implementation.

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