Appendix B

Spectrometer Dimensions

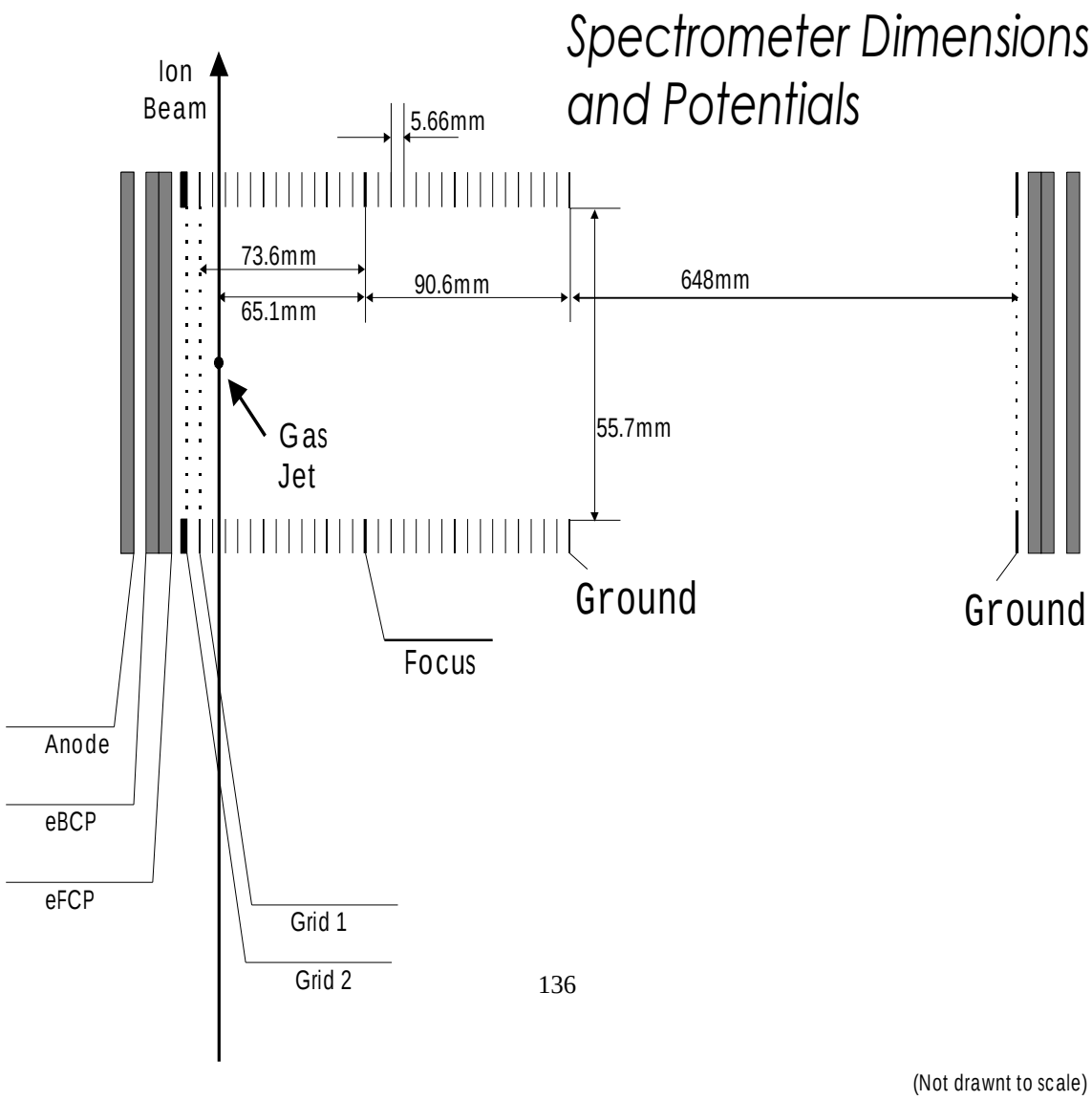
In this section, we will present the spectrometer dimensions for each of experiments described in chapters two, three and four. Each version of the spectrometer consisted of a series of 2.5" × 2.5" × 0.039" brass plates with a 2.2" hole in the center. The plates were mounted on threaded rods and separated by “fish-spine” beads so that they were spaced 5.66mm apart. 500kΩ resistors were used between each adjacent pair of plates to form the uniform potential gradients.

Chapter 2

Below is a schematic diagram of the spectrometer design for the chapter 2 experiments. The grid on the right (recoil side) was always at ground. The grid on the left (electron side) was at the pusher voltage, which varied as described in the text.

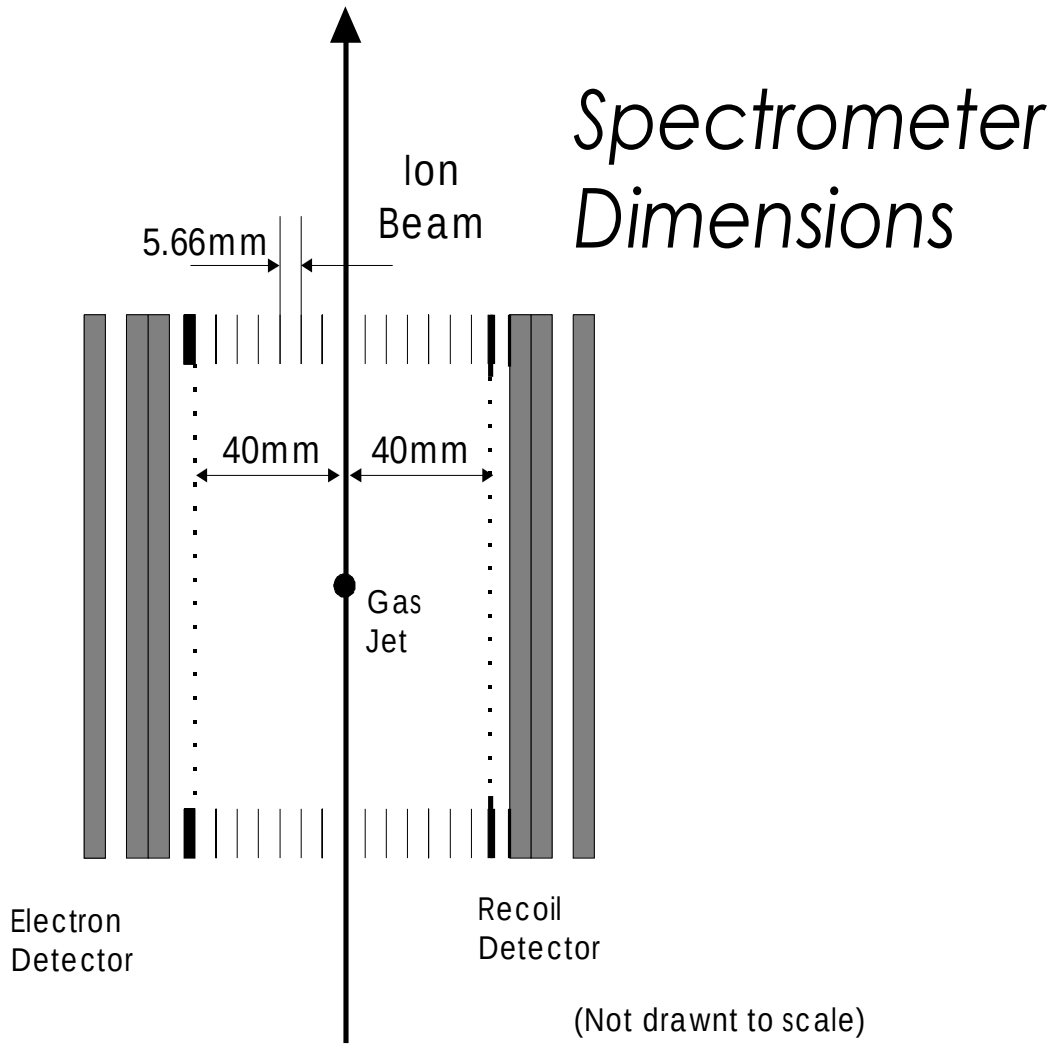
Chapter 4

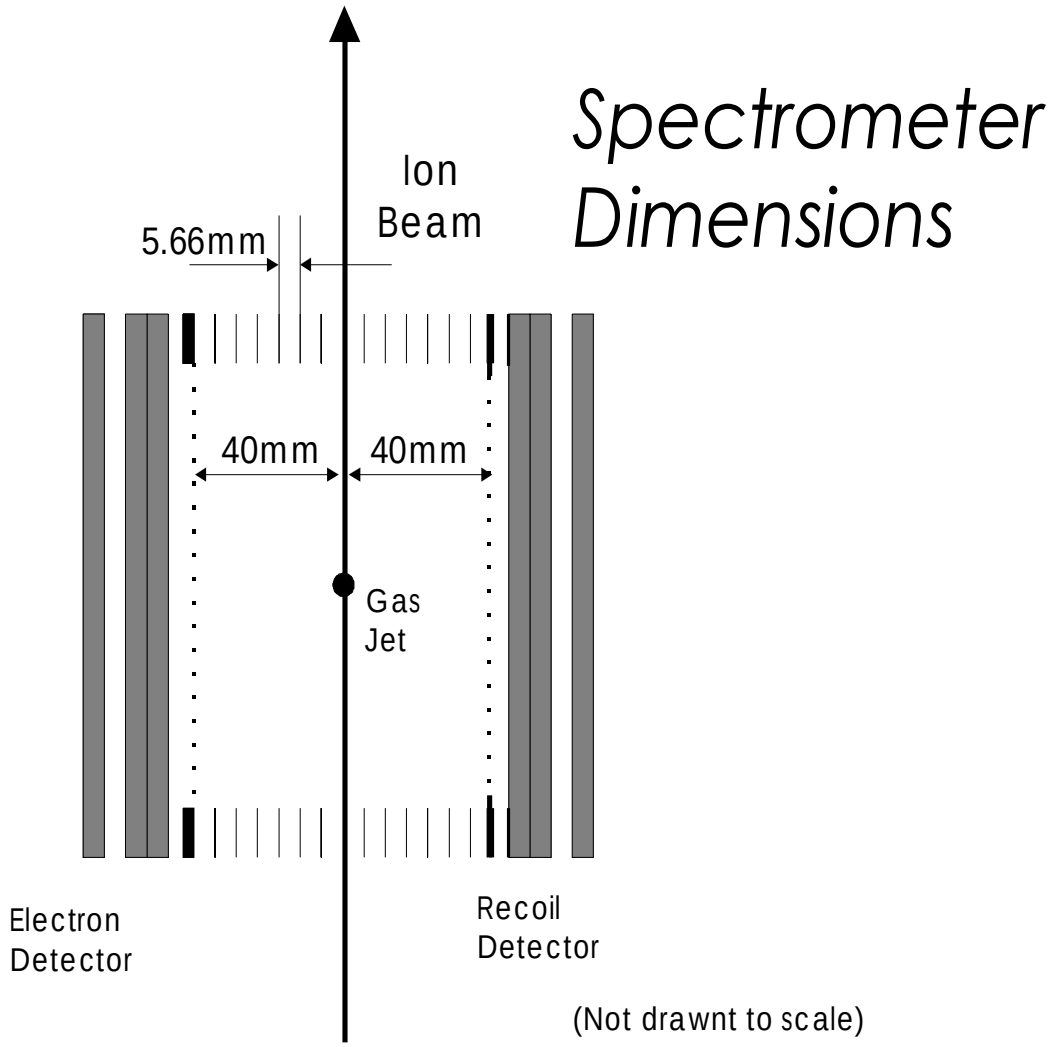
Shown below is the final version of the spectrometer used for the measurements of the single ionization of He described in chapter 4.



Chapter 3

Shown below are the spectrometer dimensions for the molecular dissociation experiments described in chapter 3. Changes from the previous design included removal of the recoil ion drift region and the addition of the gas jet (coming out of the page).



Chapter 3

Shown below are the spectrometer dimensions for the molecular dissociation experiments described in chapter 3. Changes from the previous design included removal of the recoil ion drift region and the addition of the gas jet (coming out of the page).