

Physics 410-510
Experiment E-5

**Excitation Potentials of Mercury
and the Ramsauer Effect**

1. Measure one of the excitation potentials of mercury vapor by the Franck-Hertz method using the commercial Neva apparatus.
2. Make measurements on the 2D21 Xenon thyratron to show the Ramsauer effect - the anomalously high transmission at low energies of electrons through the xenon.

References:

1. Richtmyer and Kennard, *Introduction to Modern Physics* (1942), pp. 243-247.
2. J. B. Hoag, *Electron and Nuclear Physics*, 2nd Ed. (1938), pp. 145-151.
3. T. R. Cuykendall, *American Physics Teacher*, 4, 93-97 (1936).
4. Harnwell and Livingood, *Expt. Atomic Physics*, (1933), pp. 314-319.
5. This notebook contains write-ups relevant to earlier incarnations of the experiment. You may find the physics discussion useful even though the apparatus differs somewhat from yours.

September 28, 1993.1

Revised November, 2002