H2D2

To calibrate

- With SynerJY program open
  - Collect
  - Experiment setup
  - Click on “Detectors” icon
    - Start: 546,1 nm
    - End: 546.3 nm
    - Increment: 0.001 nm
    - Integration time: 0.01 seconds
    - High voltage supply: input 750 volts
      - Click on/off box to green
  - Click on “Monos” icon
    - Slits
      - Front entrance: 0.02nm
      - Front exit: 0.02 nm
- Turn on Hg source
- Position at entrance
- Manual slits set at 1
- Click Run in SynerJY program
- When run completes
  - Determine the center wavelength between the two observed peaks
  - The listed wavelength in a vacuum for this peak of mercury is 5460.735 Angstroms from http://physics.nist.gov/RhysRefData/Handbook?Tables/mercurytable2.htm
- Log on to: http://emtolbox.nist.gov/wavelength/edlen.asp
  - Input for vacuum wavelength: 546.0735 nm
  - Input current air temperature
  - Input current atmospheric pressure
  - Input current air humidity
  - Hit: Calculate Wavelength in Ambient Air and Refractive Index of Air
- In SynerJY
  - Move the grating to the center position
  - Select to “Monos” button
  - Click the “Calibrate” button
  - In the Calibration Dialog window
    - Current position should read the value for the determined center point
    - In the Calibrate Position box, input the determined center point wavelength
    - Click OK
- The monocrometer is now calibrated for the wavelength of Mercury in Air at current conditions.