

Spectroscopy Lab

Purpose: To use spectroscopy to identify unknowns

Materials: Spectrometer, various solutions, computer, disposable pipettes.

Procedure:

1. Obtain samples in disposable pipettes. One pipette full will probably be enough.
2. Plug Spectrometer into USB port.
3. Open Logger Pro. If Logger Pro does not auto-recognize the spectrometer, ask the instructor for help. :)
4. Choose Calibrate under the EXPERIMENT menu.
5. Wait for warm-up and then insert a blank. Finish calibration, but do NOT click the green button yet.
6. Insert sample and click on the green button. Click STOP (Red button) after the spectrum forms
7. Under the EXPERIMENT menu, choose **“Store Latest Run.” Use text annotation to label the lines.**
8. Repeat with a different sample. There are 6 knowns and 3 unknowns.
9. **Make separate graphs for the knowns and the unknowns.**

Double click on the graph. Choose axis options. In the “X axis” section select manual scaling. Set the low range to 380 nm and the upper range to 780 nm. This will help in identifying the unknowns.

Data: Put your graphs in your lab book.

Conclusion:

1.
 - a. What compounds were in the unknowns?
 - b. Briefly describe how you know. Mention wavelengths.
2. Would it be more logical to call the spectrum that was created an absorption spectrum or an emission spectrum? Why?
3. Discuss your understanding of what was occurring inside the atom as the light was passed through the sample.