CHAPTER OVERVIEW

1: General Background on Molecular Spectroscopy

Learning Objectives

After completing this unit the student will be able to:

- Explain what it means to use spectroscopic methods for qualitative and quantitative analysis.
- Identify the terms in and describe deviations to Beer's Law.
- Describe the effect of changing the slit width and the impact it will have on qualitative and quantitative analyses.
- Qualitatively determine the relative error in absorbance measurements and determine the optimal range for measurement purposes.
- Describe the desirable features of a radiation source. 6. Explain the advantages of a dual versus single-beam spectrophotometer.
- Explain the difference between a 3- and 4-level laser and why it is not possible to have a 2-level laser.
- Compare the output of and advantages of prisms and gratings as dispersing elements.
- Explain how a photomultiplier tube works.
- Explain how an array detector works and describe the advantages of using an array detector.

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