The following set of experiments introduce students to the applications of spectroscopy. Experiments are grouped into five categories: UV/Vis spectroscopy, IR spectroscopy, atomic absorption and atomic emission, fluorescence and phosphorescence, and signal averaging.

**UV/Vis Spectroscopy**


• Smith, E. T.; Matachek, J. R. “A Colorful Investigation of a Diprotic Acid: A General Chemistry Laboratory Exercise,”


IR Spectroscopy


Atomic Absorption and Atomic Emission Spectroscopy


• Masina, M. R.; Nkosi, P. A.; Rasmussen, P. W.; Shelembe, J. S.; Tyobeka, T. E. “Determination of Metal Ions in


**Fluorescence and Phosphorescence Spectroscopy**


**Signal Averaging**


The following sources provide additional information on spectroscopy in the following areas: general spectroscopy, Beer’s law, instrumentation, Fourier transforms, IR spectroscopy, atomic absorption and emission, luminescence, and applications.

**General Spectroscopy**

• Ball, D. W. “Units! Units! Units!” *Spectroscopy* **1995**, 10(8), 44–47.


**Beer’s Law**


**Instrumentation**


**Fourier Transforms**


**IR Spectroscopy.**


• Porro, T. J.; Pattacini, S. C. “Sample Handling for Mid-Infrared Spectroscopy, Part II: Specialized Techniques,” Spectroscopy 1993, 8(8), 39–44.
Atomic Absorption and Emission


Luminescence Spectroscopy


Applications


Gathered here are resources and experiments for analyzing multicomponent samples using mathematical techniques not covered in this textbook.


