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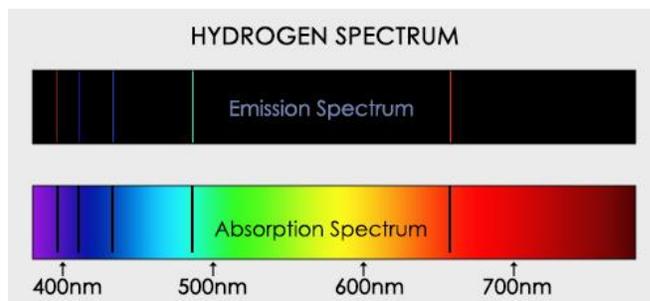
AP Chemistry 30 – Lab Activity 1: Emission Spectra

Learning Objective

- Draw emission spectra for a gaseous element using a spectroscope
- Analyze emission spectra data

Background Information

Every element emits a unique range of colours called an emission spectrum. A similar spectrum, called an absorption spectrum, is produced with the same pattern when light shines through a gas and certain wavelengths are absorbed.

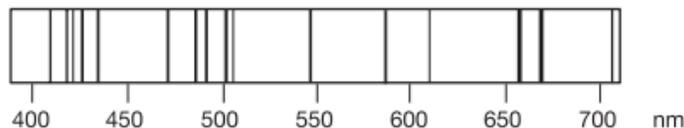
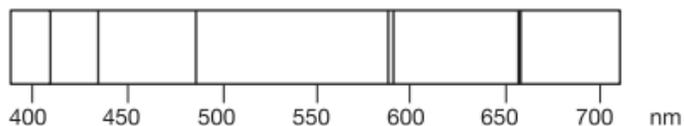
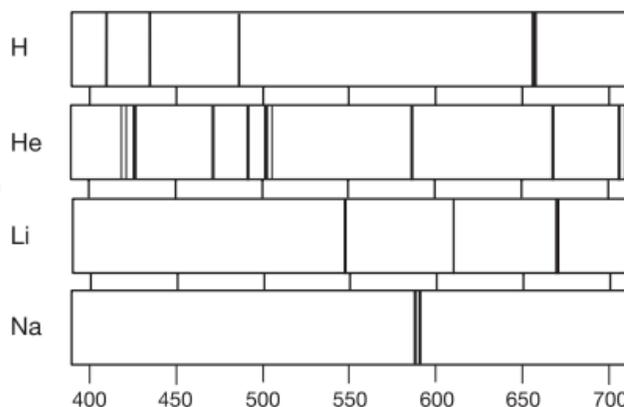


The emission spectrum for an unknown mixture will contain the emission spectra for each element in the mixture.

Pre-Lab

The emission spectra for four specific elements are shown.

1. Identify the colour of brightest line shown for each element based on the wavelength.
2. For lithium, determine the energy of light for each of the three lines on the emission spectrum, using the wavelengths.
3. For each of the two emission spectra for an unknown mixture below, identify which elements are present.



Lab Information

Work with a partner to perform the lab. Write your own answers for the questions below.

1. Use the spectroscope to look at the light sources shown by Ms. Hayduk.
 - a. Write down what type of spectrum you see (continuous, emission, absorption).
 - b. Sketch the spectrum for each element on the data table.
2. You will be shown a mystery gas. Determine what the gas is.

