

## Agonies of Verbal Precision: Spectroscopy

Instruments commonly used today are marked by an asterisk.

**Colorimeter:** Human eye classifies absorption wavelength by comparing with standards. No quantitative intensity measurement (just categorization as “strong,” medium,” “weak,” or “very weak.”)

**Photometer:** Contains filter and photoelectric detector; measures wavelength and intensity (**fluorimeter** if fluorescence).

**Spectroscope:** Contains dispersive element; human eye looks for emission lines; wavelength (only).

\***Spectrometer:** Contains full monochromator, including exit slit(s); single-beam instrument; measures wavelength and intensity.

\***Spectrophotometer:** Double-beam absorption spectrometer (**spectrofluorimeter** if measuring fluorescence).

\***Spectrograph:** Contains dispersive element (*i.e.* prism or grating) but no exit slit(s); entire spectrum dispersed in space is recorded at once. Historically, the spectrum was captured on film, allowing only for qualitative intensity observations. Nowadays, spectrum is captured by diode arrays (if dispersed in one dimension) or charge-transfer devices (if dispersed in two dimensions), allowing for intensity measurements as well.