Introduction

Theory

Spectrometer

We shall first, in short, explain how a spectrometer works and what it is used. A spectrometer is a device that can measure the spectral composition of light. Fig. 1 shows the spectrum of hydrogen. The most common form of spectrometer, which is also what we have used, is a grating spectrometer. A grating spectrometer, separates the light by wavelength with a periodic grate, as illustrated in fig 2. Let us a consider a monochromatic component of light. As it is reflected off the grate it will only create construcive interference at specific angles. This angle is related to the wavelength by the follwing formula called the 'grating equation'

$$d\left(\sin\theta_i - \sin\theta_m\right) = \lambda m \quad m = \pm 0, \pm 1, \pm 2 \ldots .$$

Absorbtion

Emission

Results

Discussion

Conclusion