

- ① Pull entire contents of the product flask out using a non-filter pipette
- ② Transfer the product to the top of the filter pipette (solids ok)
- ③ Place a bulb on the filter pipette and force the product through the filter

Spectroscopy

Electromagnetic spectrum (EM) → Light

speed of light

$$c = \lambda \cdot \nu \leftarrow \text{frequency (Hz, s}^{-1}, \frac{1}{s})$$

wavelength (m)

energy per photon

$$E = h\nu \leftarrow \text{frequency}$$

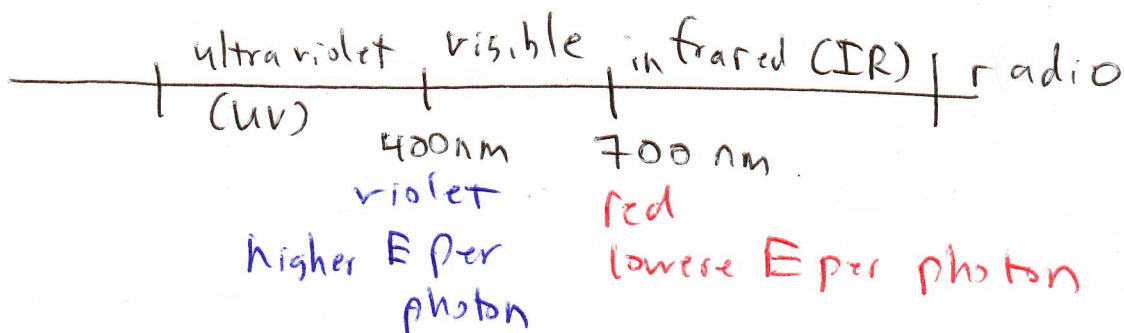
Planck's constant

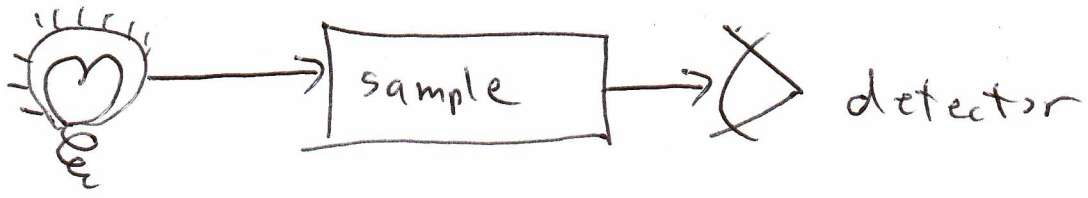
E ↑

$$\uparrow \Delta E = h\nu$$

— In order for this energy gap to be crossed, light with the correct frequency

(and therefore the correct energy per photon) must be used.

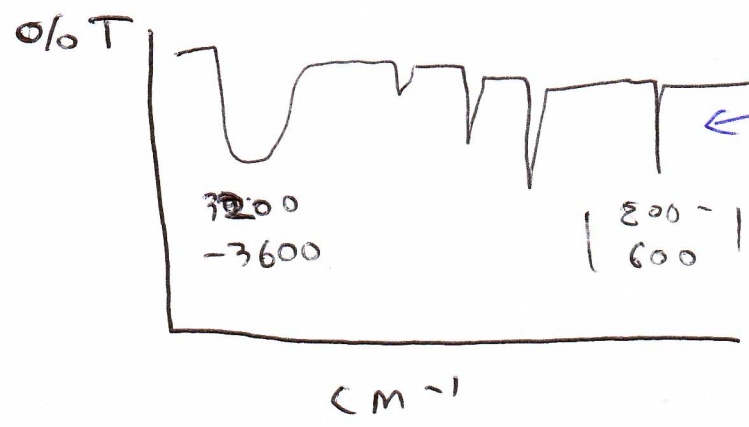




light source

transmittance - the % of light that passes through a sample

absorbance - how much light is absorbed by the sample



each peak corresponds to a specific change in energy states, which corresponds to a particular frequency of light, which corresponds to a certain energy per photon;

UV/vis - ultraviolet / visible

- electronic transitions → electronic structure

IR - infrared

- vibrational transitions → bond types +

NMR - nuclear magnetic resonance
 → allows for determination of the structure of organic molecules,

functional groups
 - radio waves