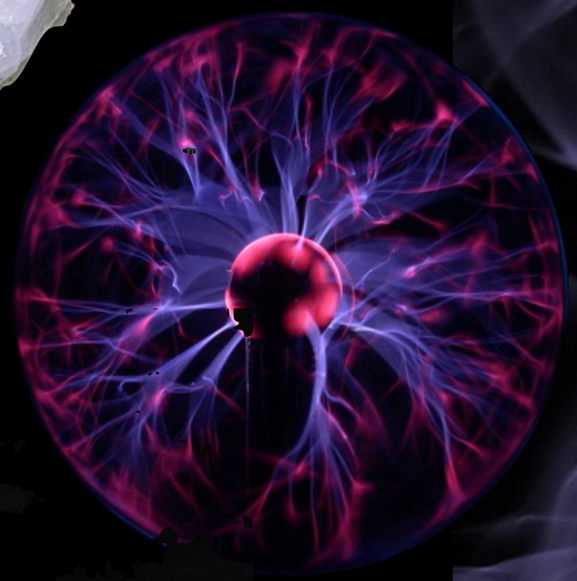
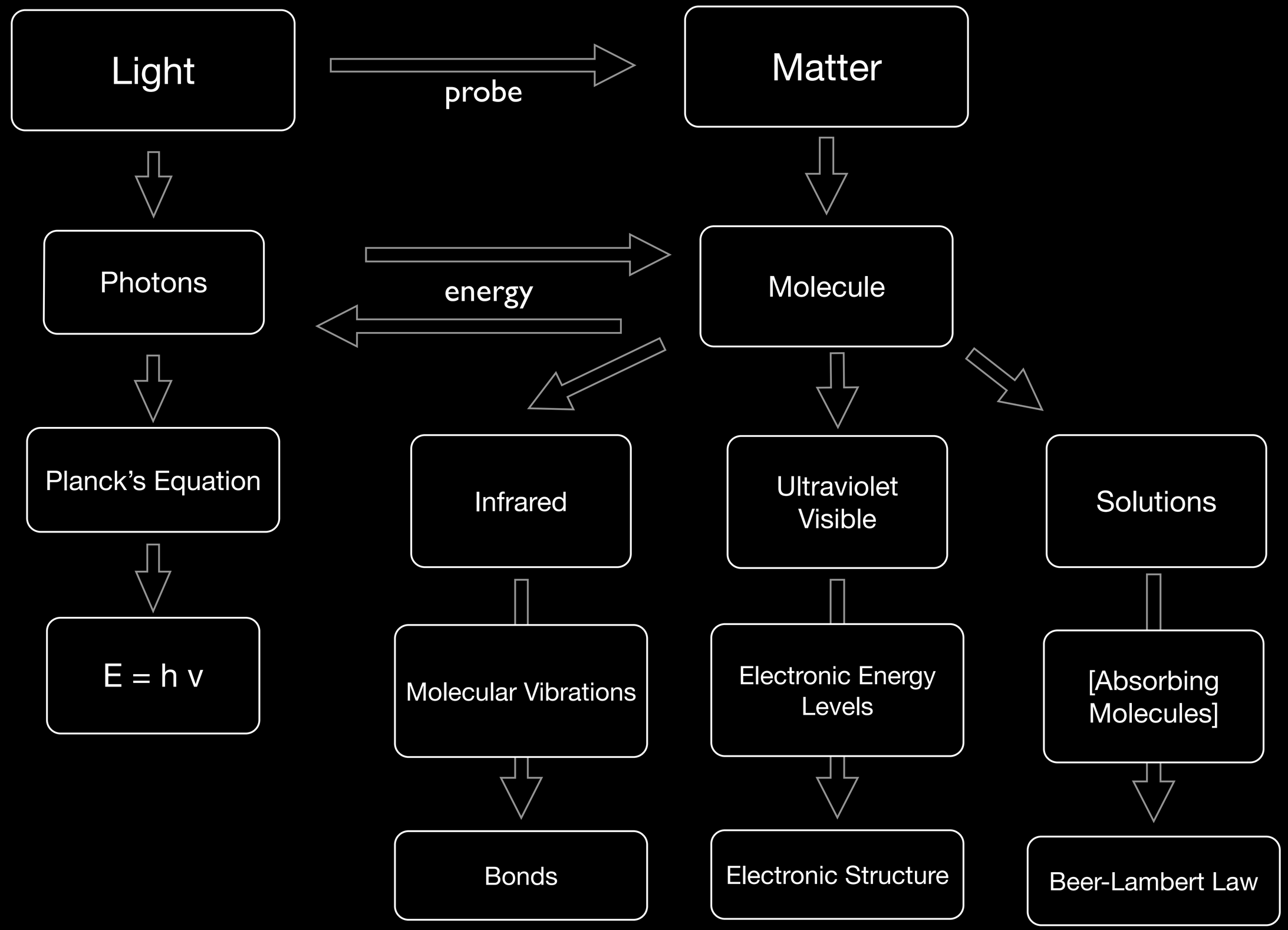
Light and Matter

Chemistry Essentials - 010

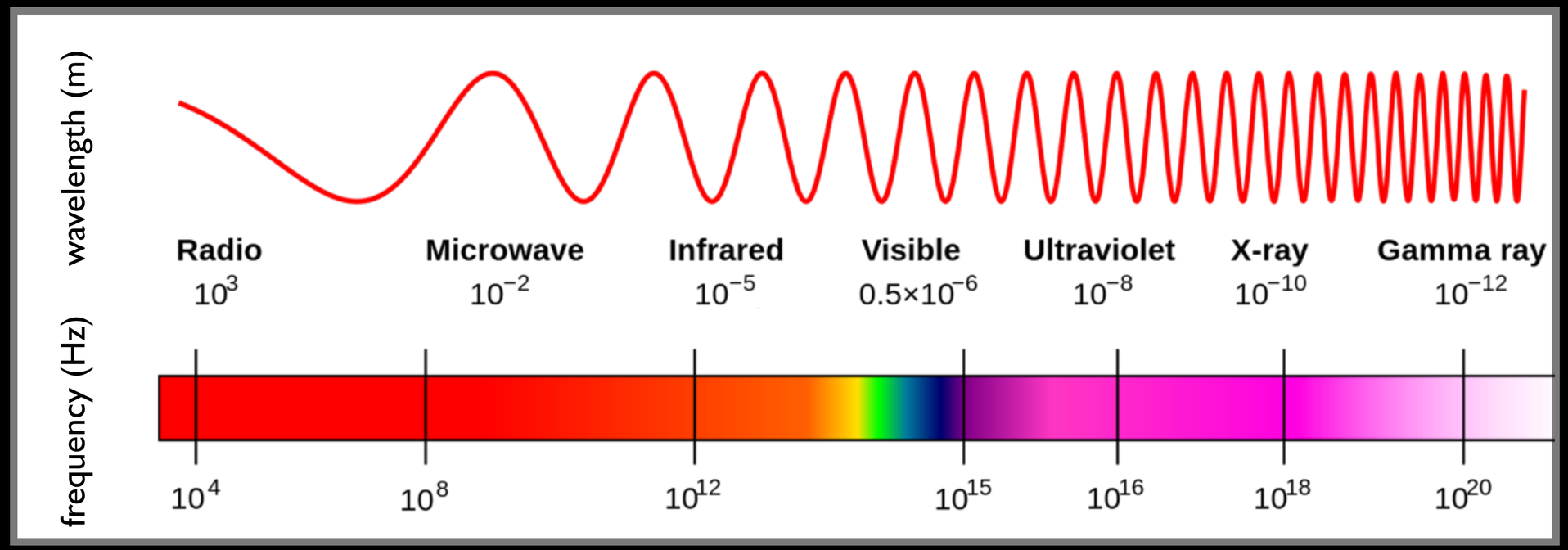
Light and Matter



Chemistry Essentials - 010



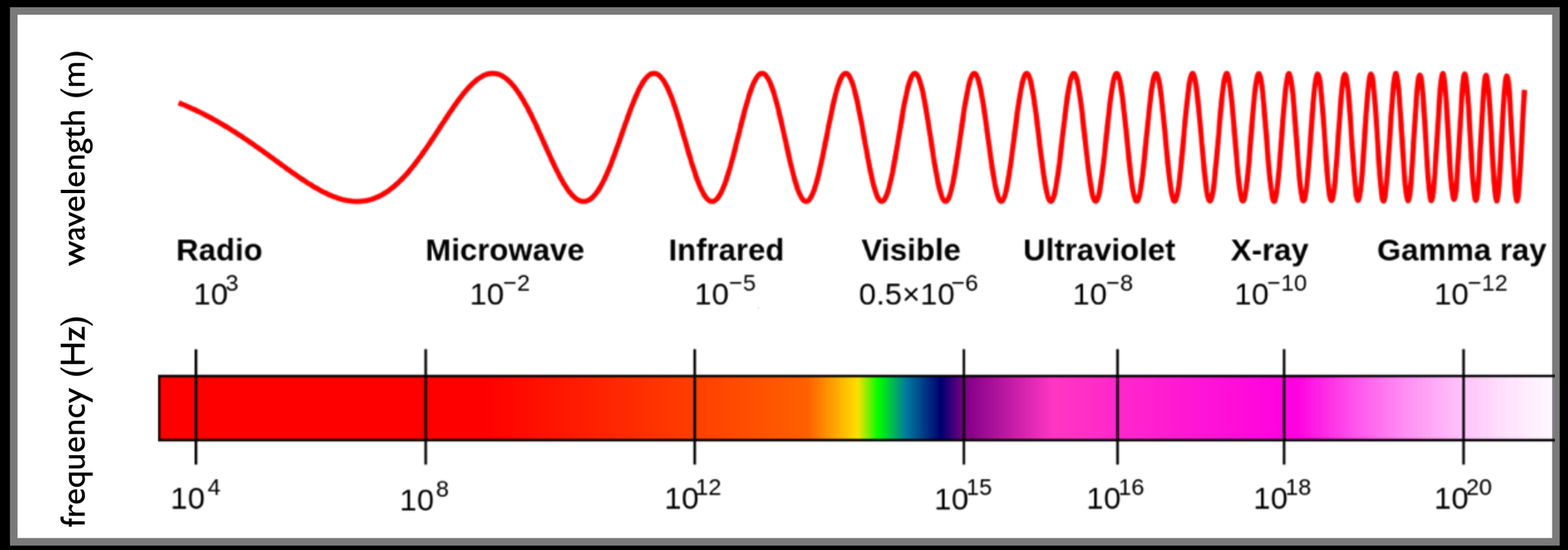
Light



Wave

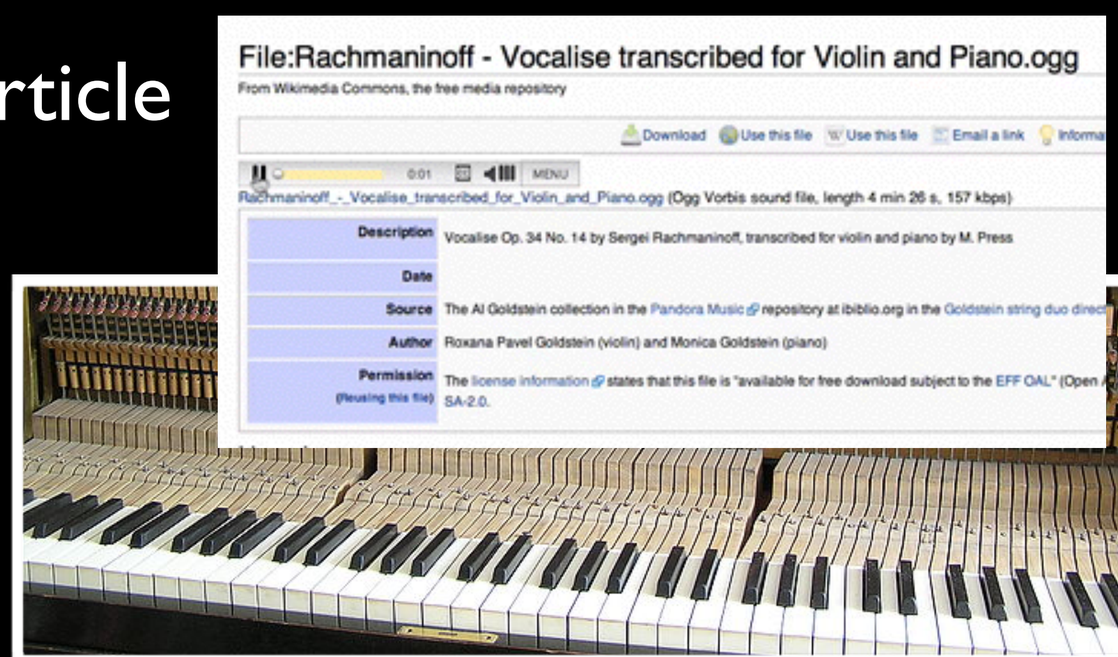
Particle

Light



Wave

Particle



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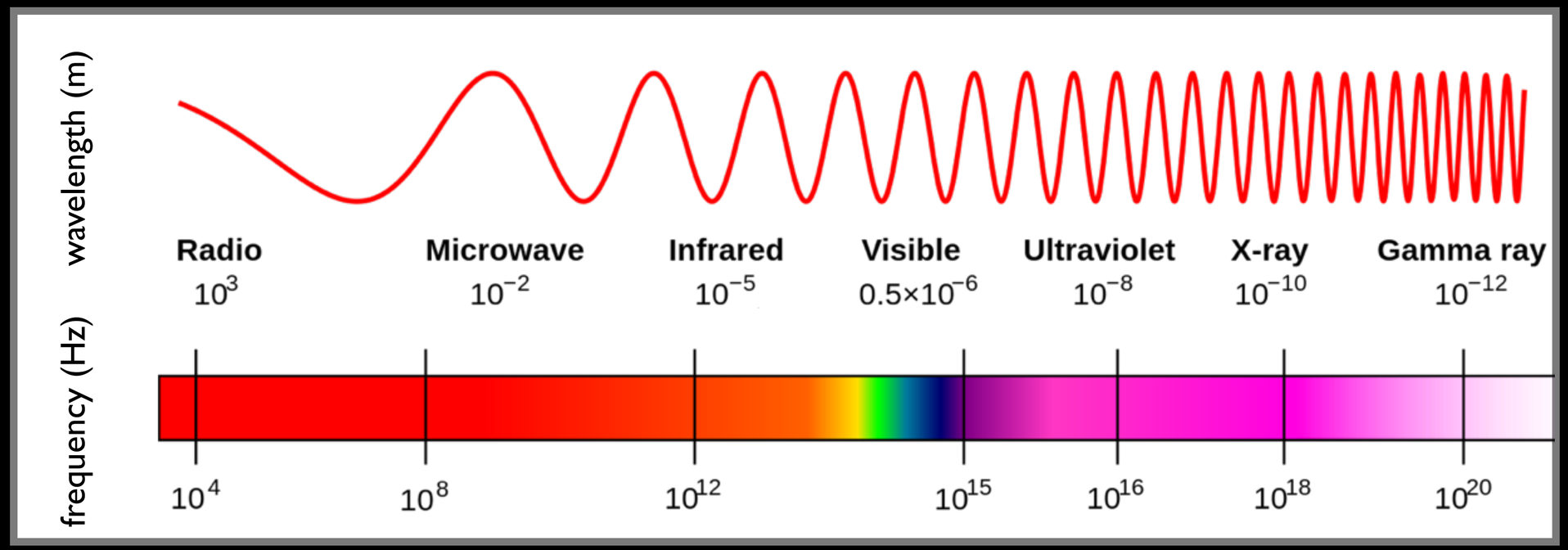
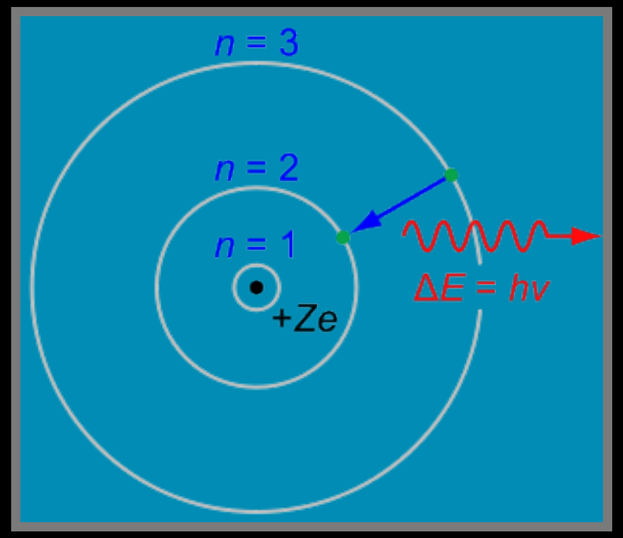
Light



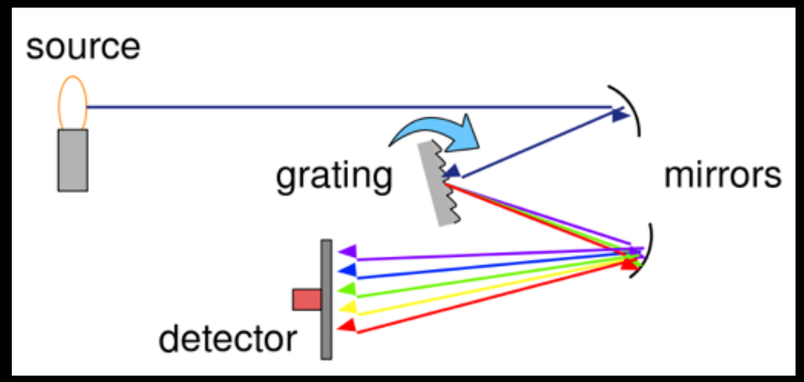
Wave

Particle

$$E = h\nu$$



Spectroscope



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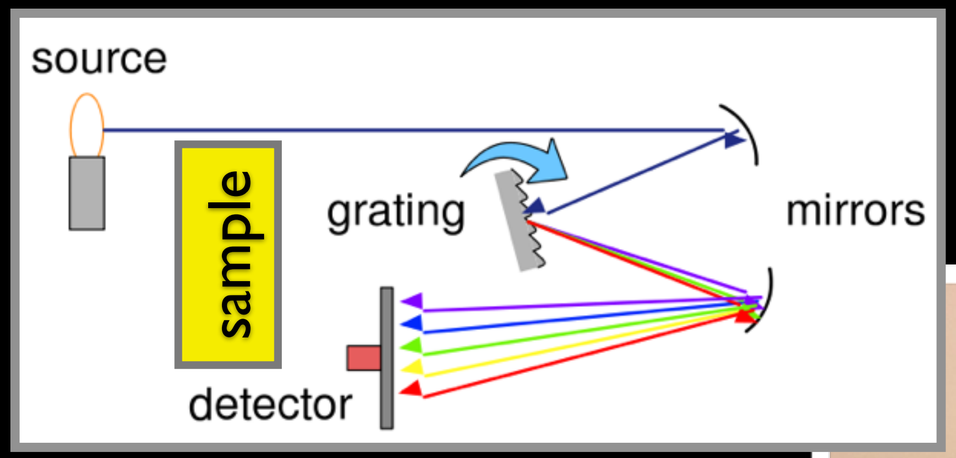
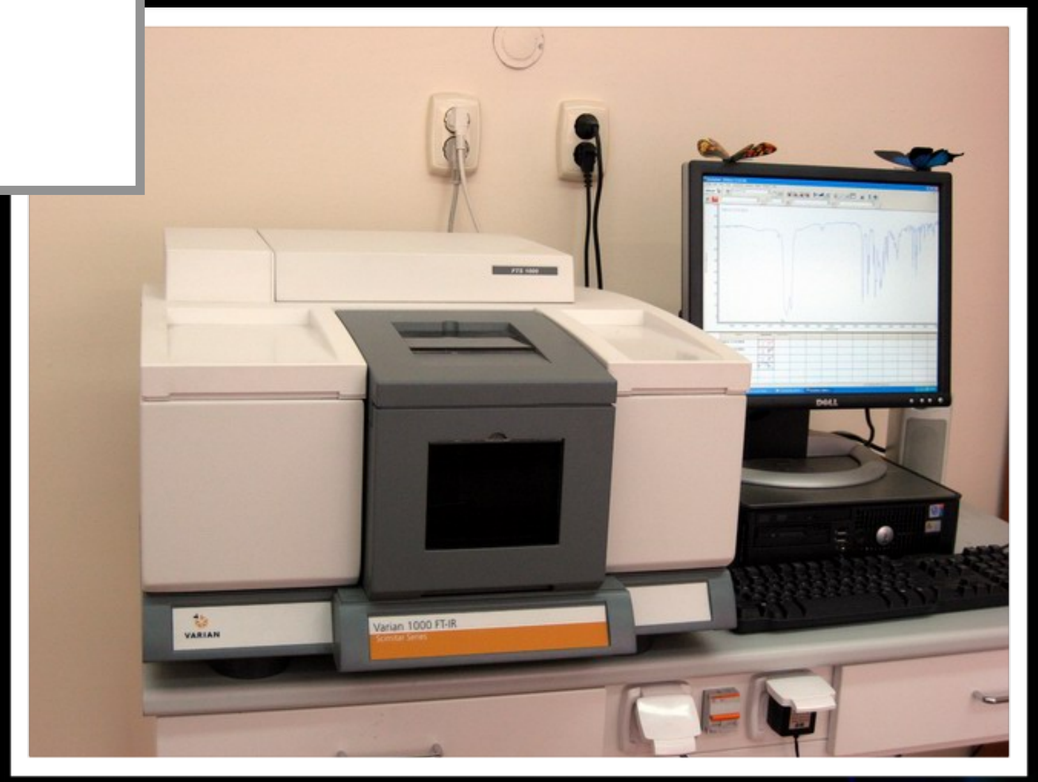
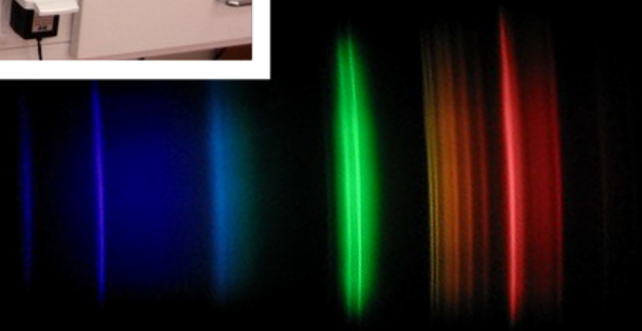
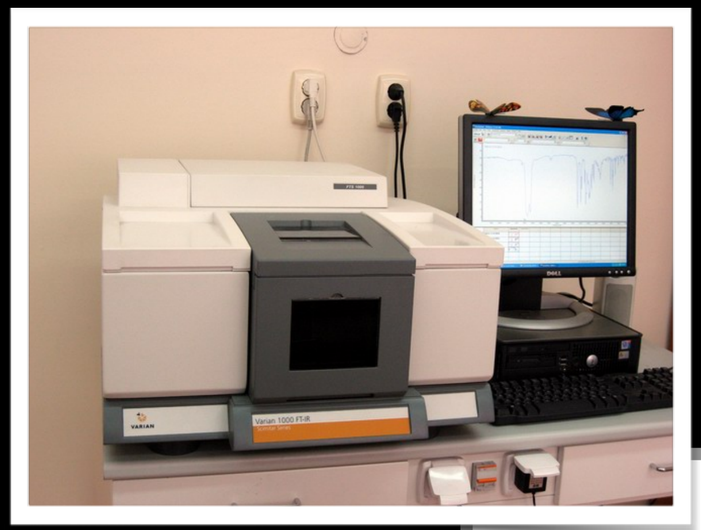
Spectrometer

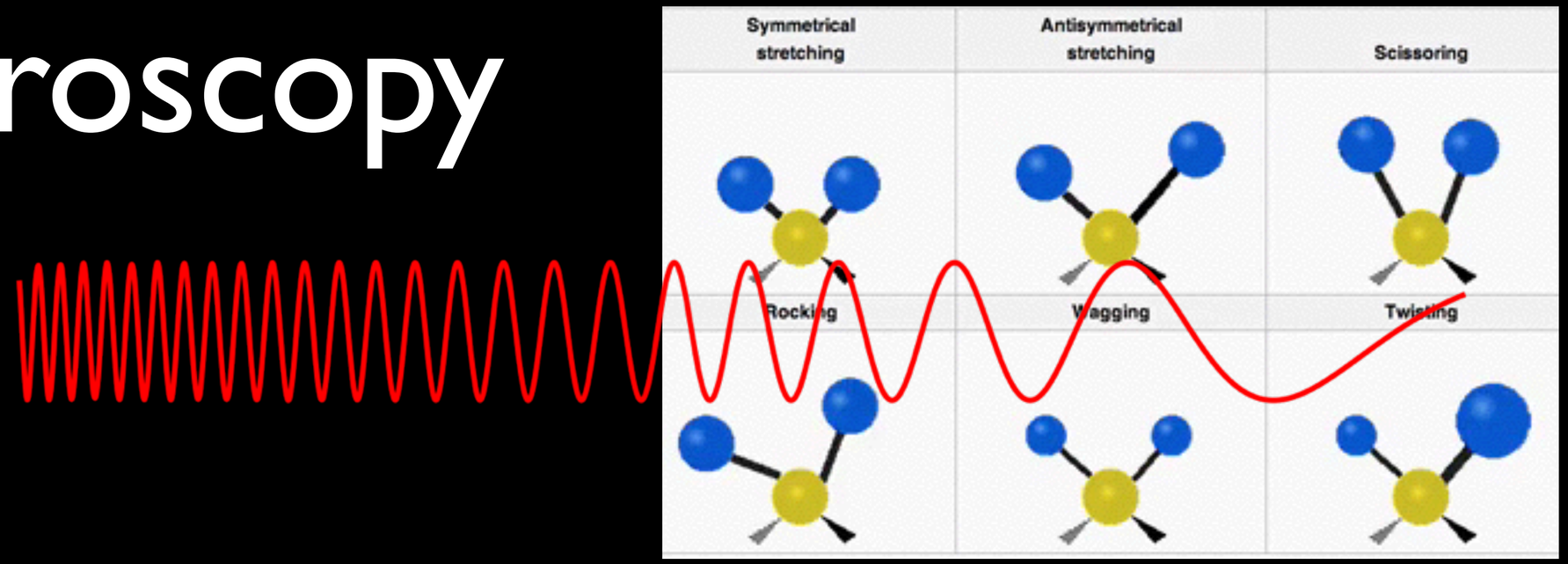


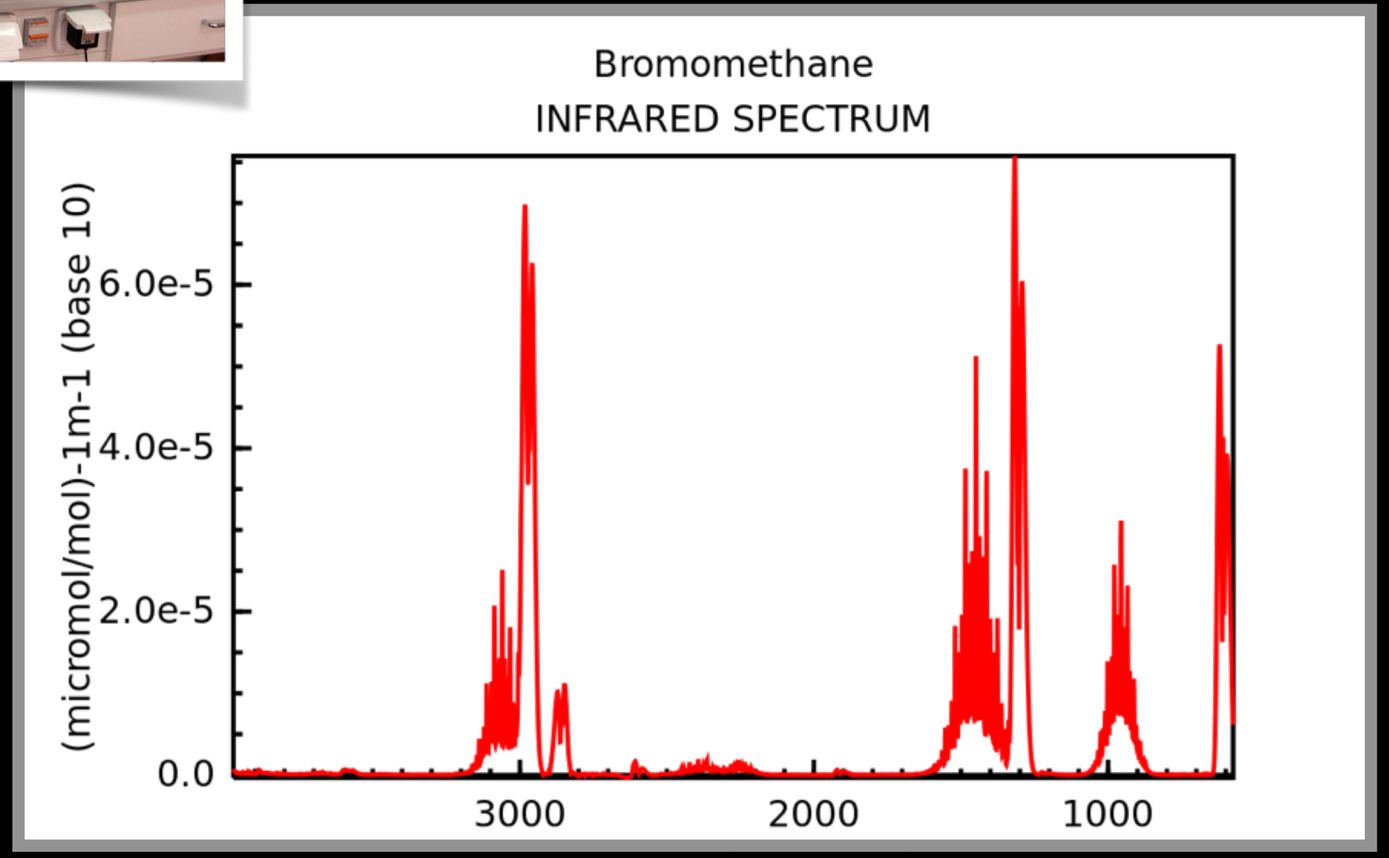




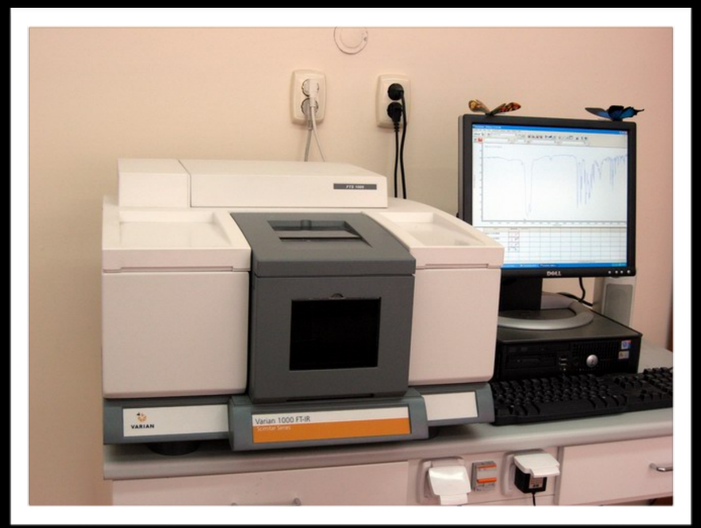
IR Spectroscopy

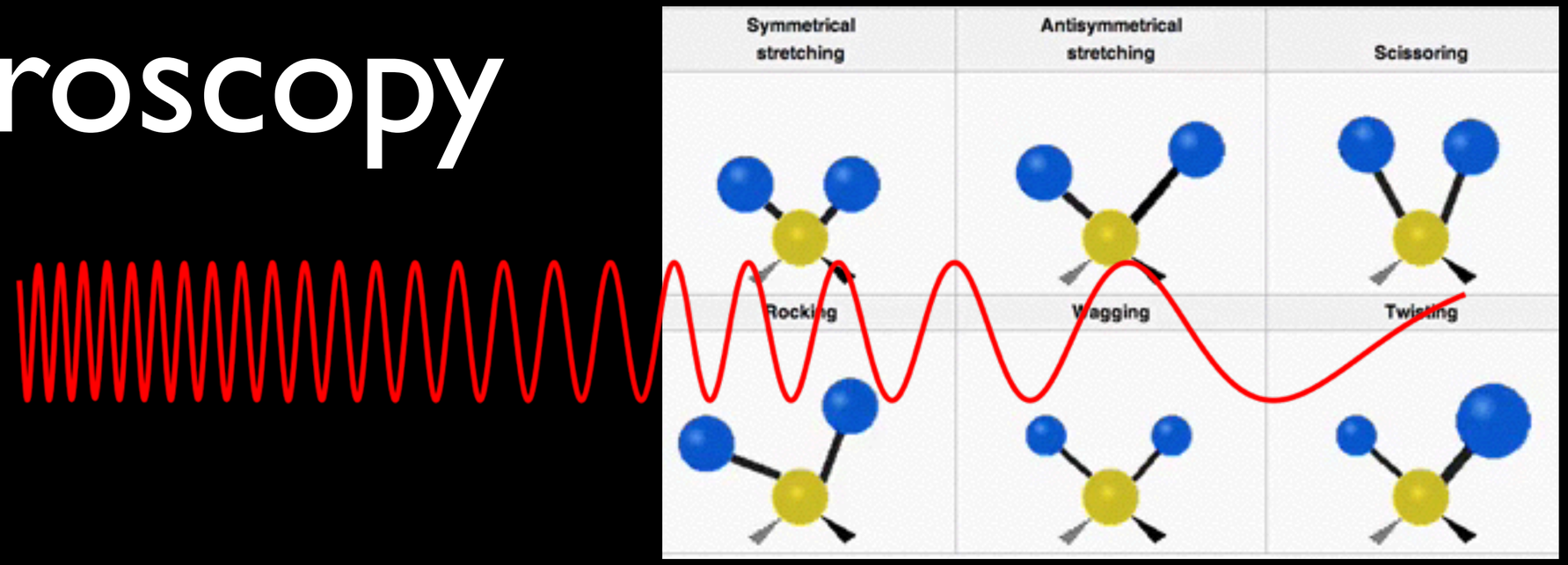


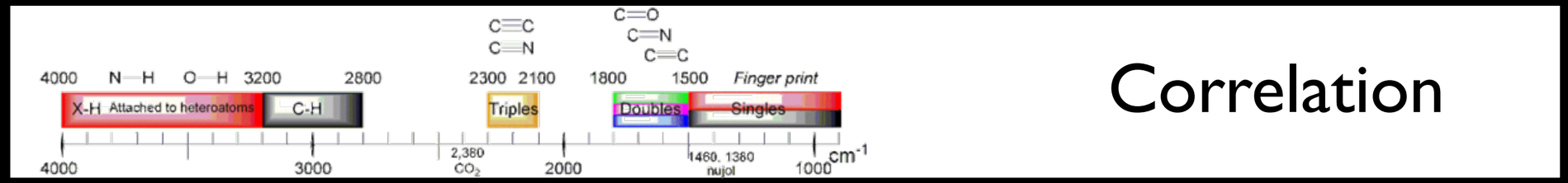




IR Spectroscopy

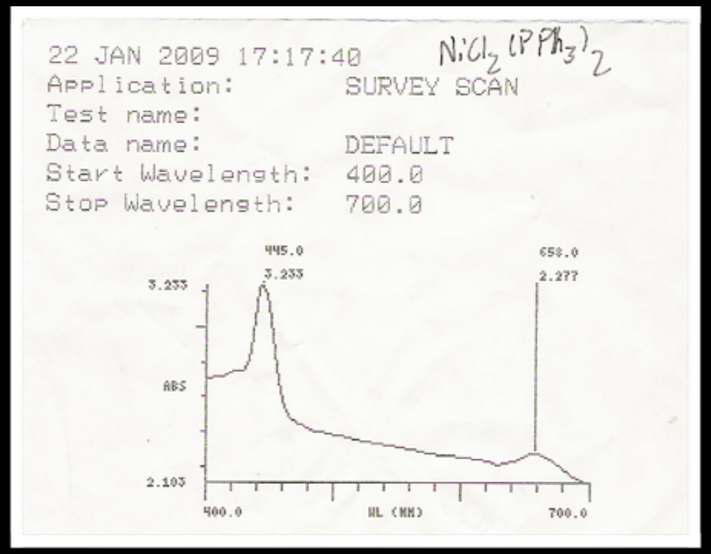


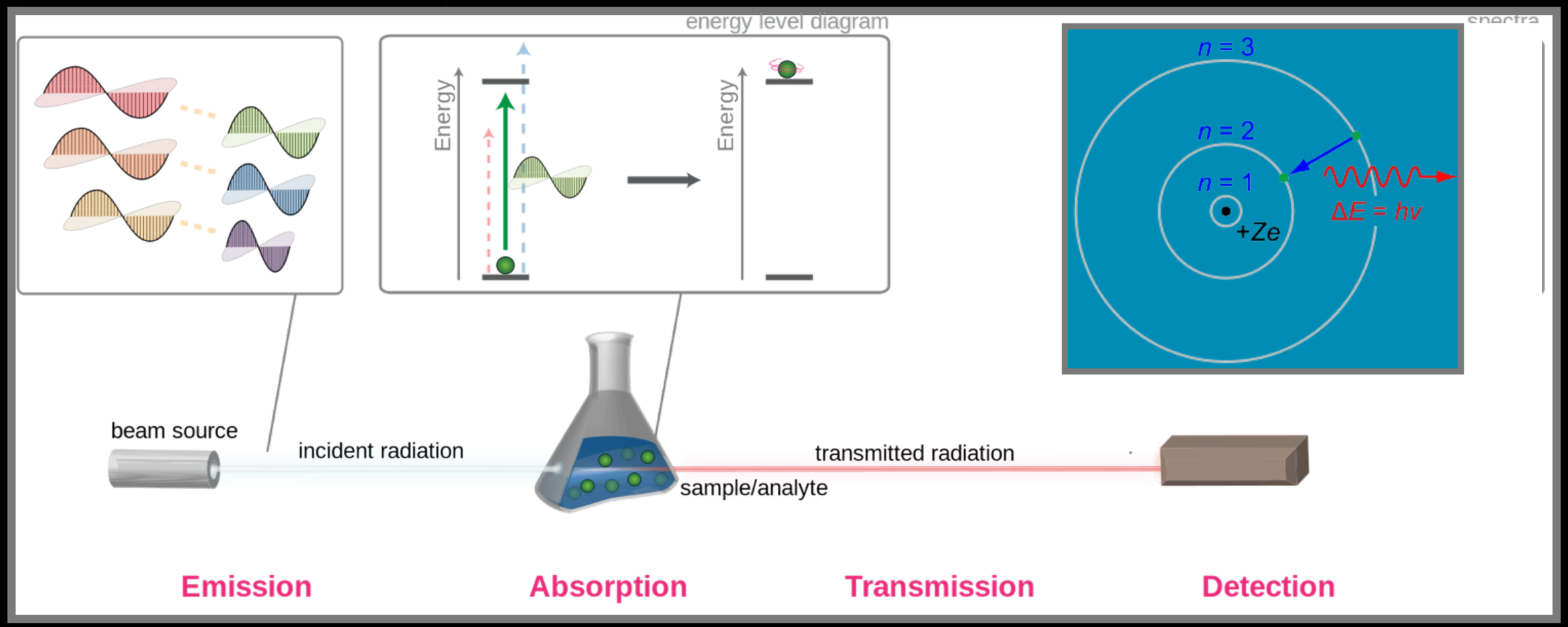




Correlation

UV / Visible





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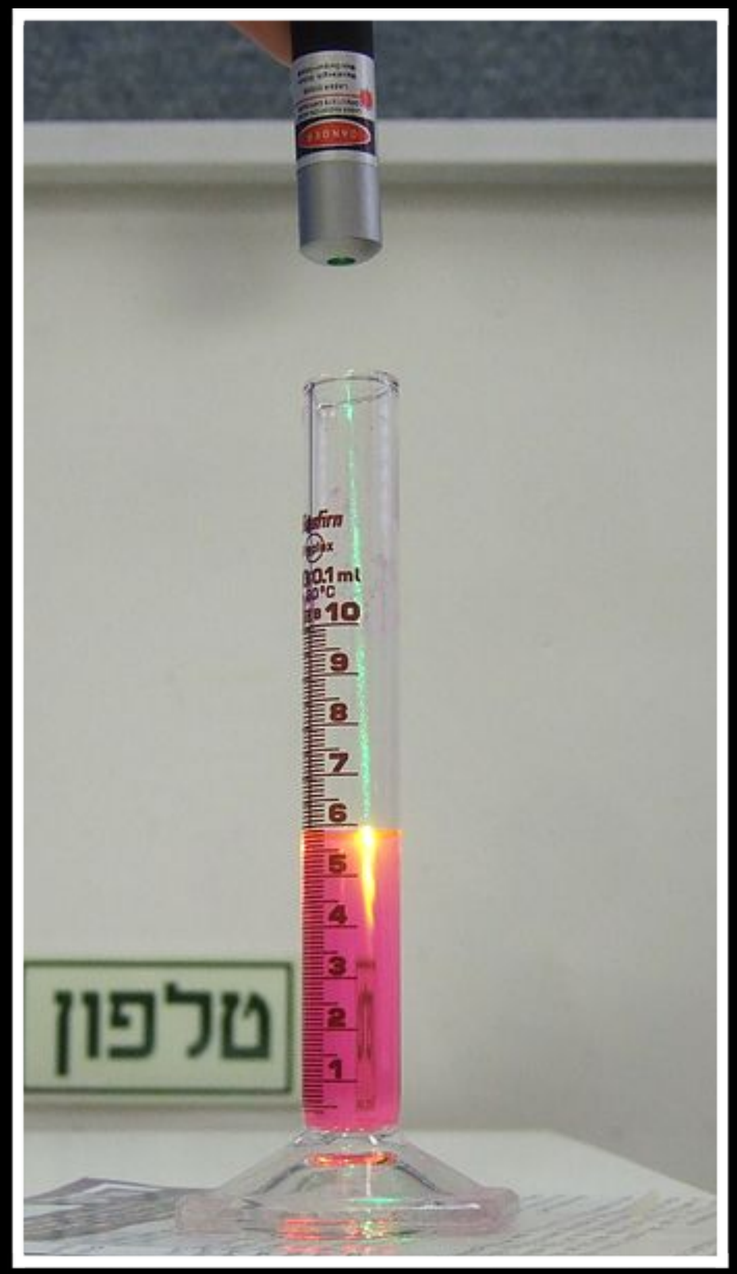
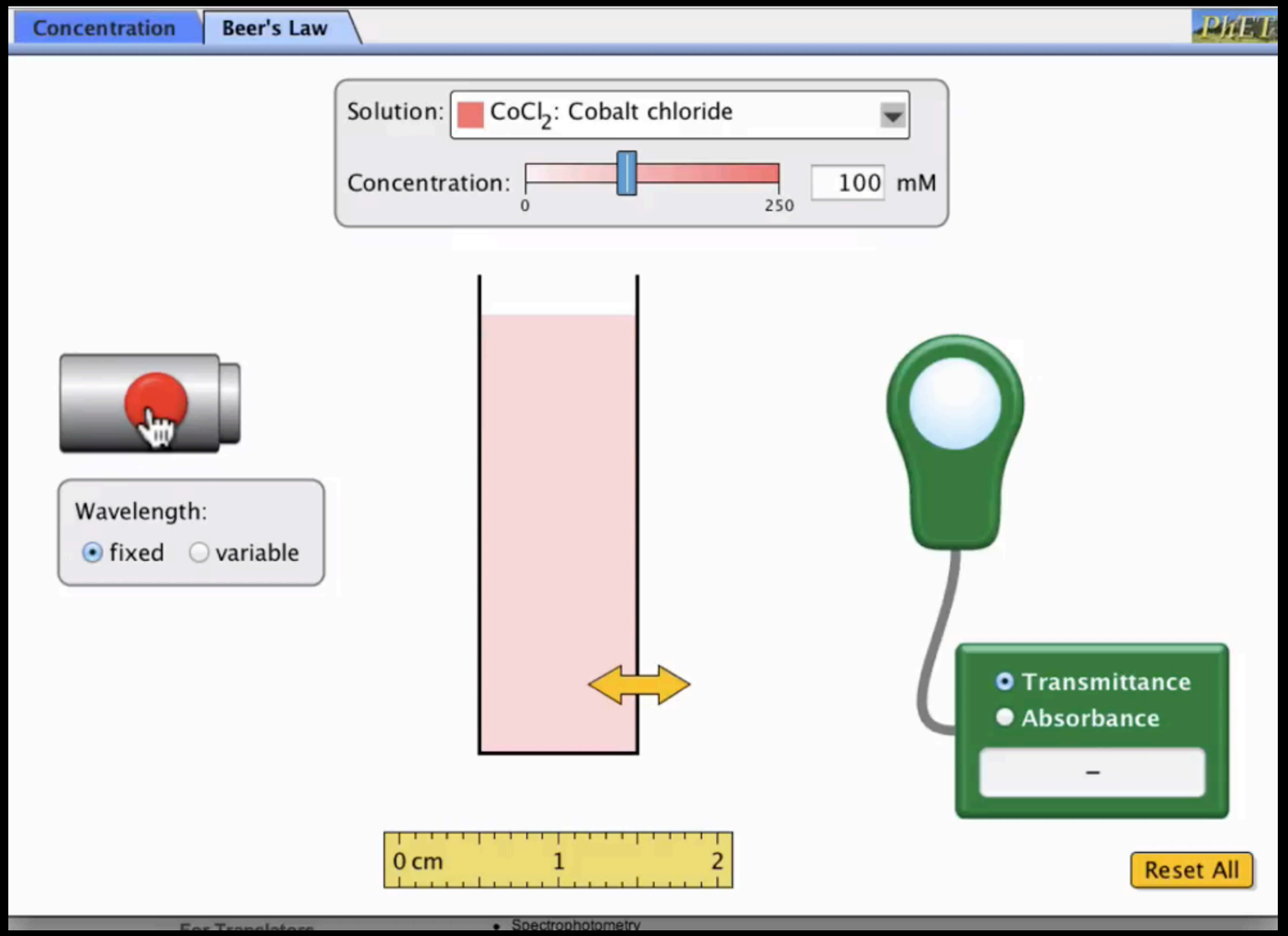
Beer-Lambert Law



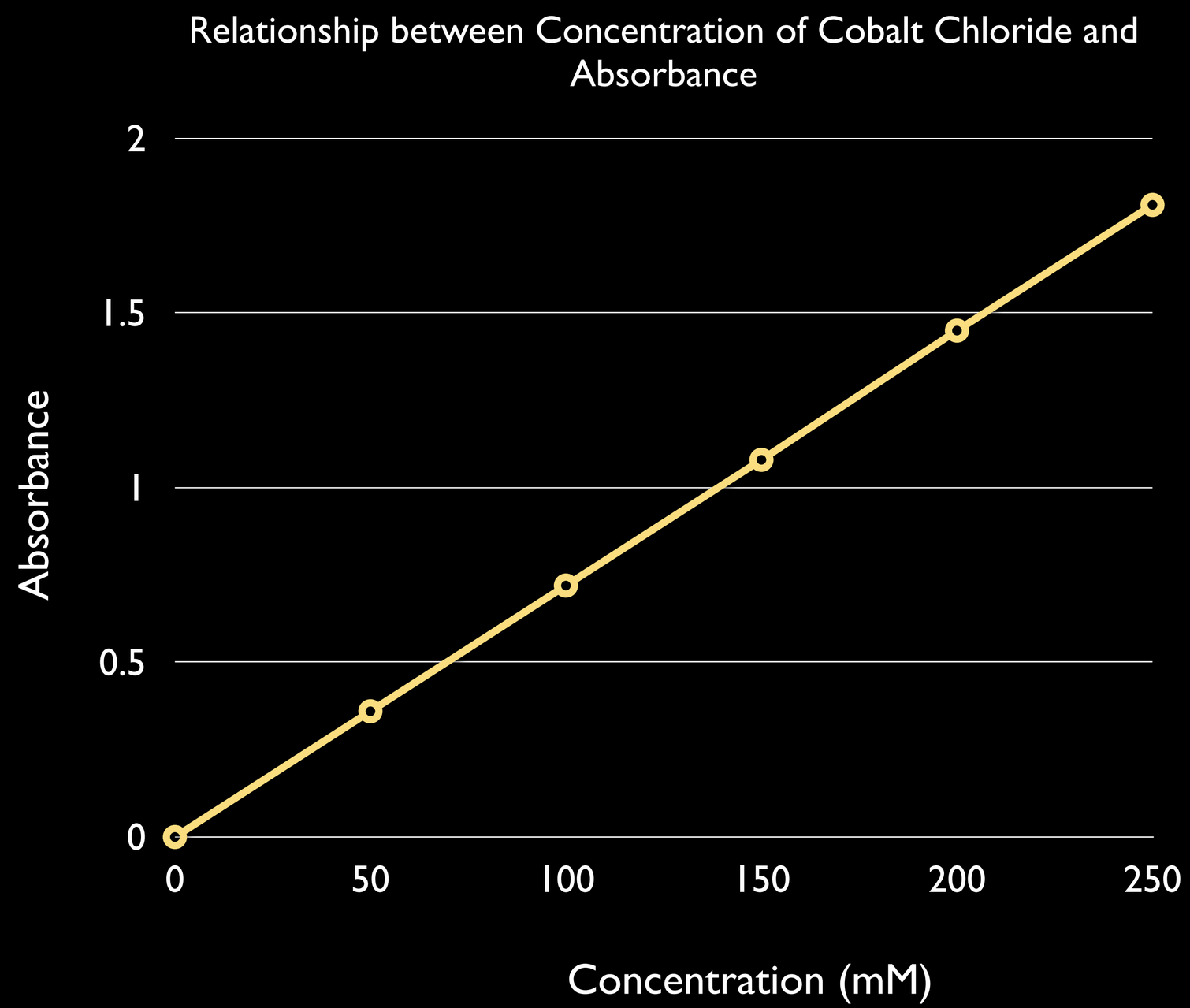
Beer-Lambert Law



Concentration (mM)	Absorbance
0	0
50	0.36
100	0.72
150	1.08
200	1.45
250	1.81

http://phet.colorado.edu/

Beer-Lambert Law



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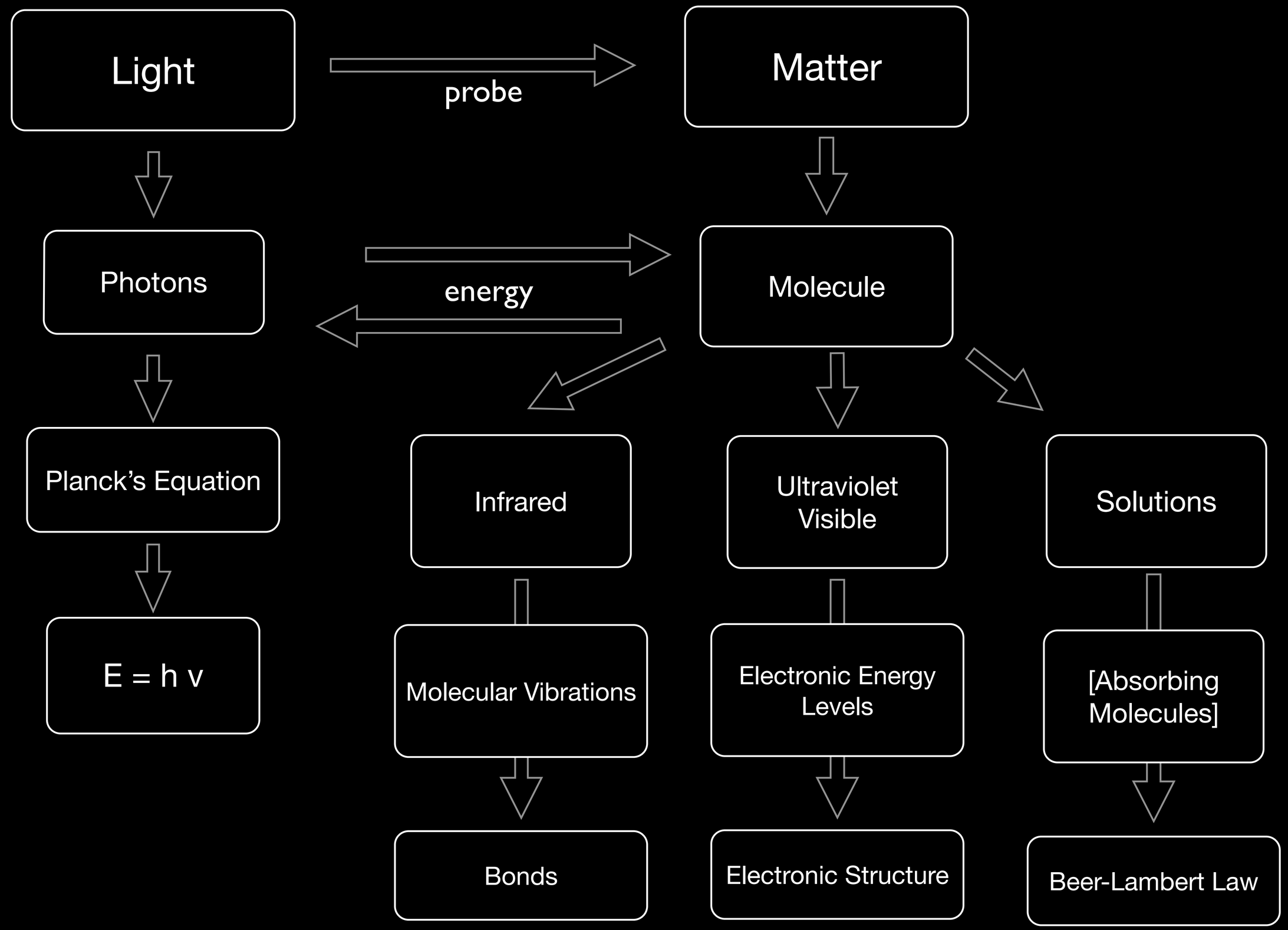
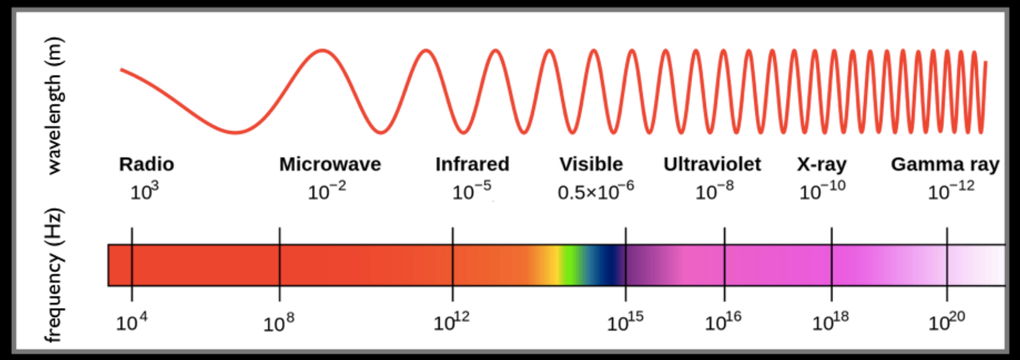
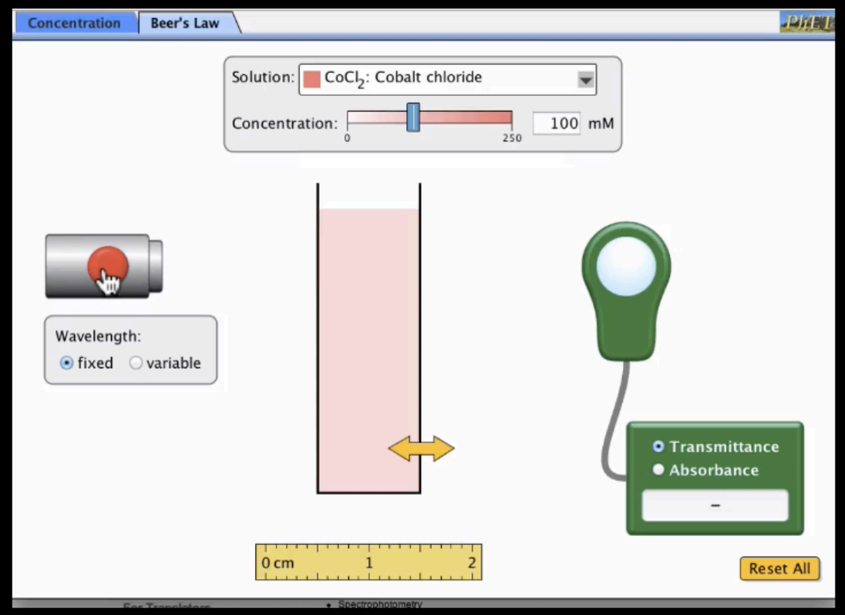


Did you learn?



Choose the correct spectroscopy to measure vibrational or electronic motion of molecules.

Did you learn?



Use the absorption of light to determine the concentration of an absorbing species in a solution.

Acknowledgements

"File:Beer–Lambert Law in solution.JPG," August 5, 2013. http://en.wikipedia.org/wiki/File:Beer%E2%80%93Lambert_law_in_solution.JPG.
"File:Bis(triphenylphosphine) Nickel (II) Chloride UV-vis.JPG," August 5, 2013. http://en.wikipedia.org/wiki/File:Bis(triphenylphosphine)_nickel_(II)_chloride_UV-vis.JPG.
"File:Bohr-Atom-PAR.svg," August 5, 2013. http://en.wikipedia.org/wiki/File:Bohr-atom-PAR.svg.
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"File:IR Summary Version 2.gif," May 20, 2013. http://en.wikipedia.org/w/index.php?title=File:IR_summary_version_2.gif&oldid=502104625.
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