ORGANIC CHEMISTRY 1 LECTURE GUIDE 2019

BY RHETT C. SMITH

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Organic Chemistry 1
Lecture Guide 2019

By Rhett C. Smith, Ph.D.

Companion Books from the Proton Guru:

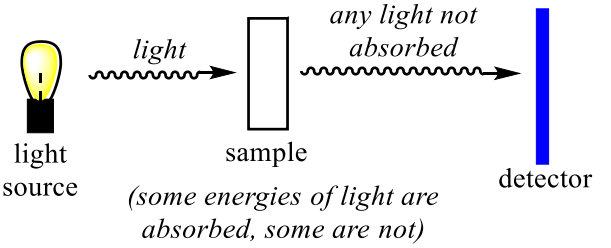
Organic Chemistry 1 Reactions and Practice Problems 2019

by Rhett C. Smith

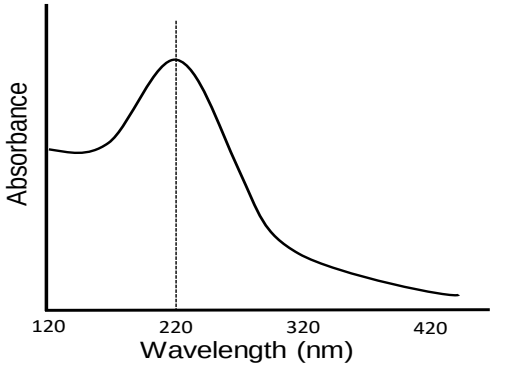
Organic Chemistry 1 Primer 2019,

by Rhett C. Smith, Andrew G. Tennyson, and Tania Houjeiry

A UV-vis spectrometer is set up as follows:



The spectrum is a plot of absorbance versus wavelength:



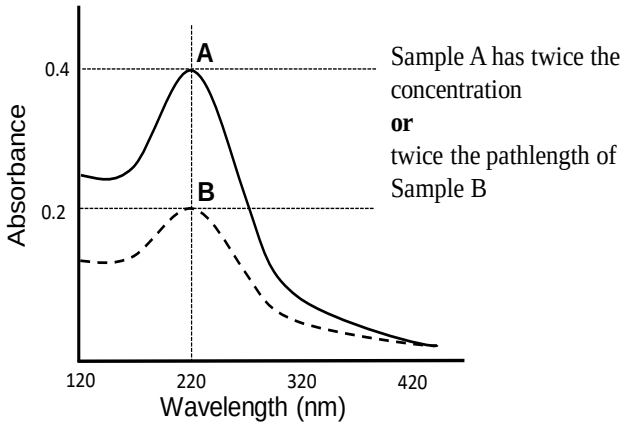
Notes

The amount of light absorbed per mole of a sample is called the **molar absorptivity** or **molar extinction coefficient**.

The **Beer-Lambert Law** provides an equation relating the absorbance (A), pathlength (b), concentration (c) and extinction coefficient (ε):

A

For a constant pathlength, then, it is easy to monitor concentration, and thus to follow the reaction rate. If a species we are following gives spectrum **A** (absorbing at 220 nm) at the start of a reaction, and spectrum **B** after 1 h, we know that half of the compound is consumed in that one hour, because the absorption is halved.



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