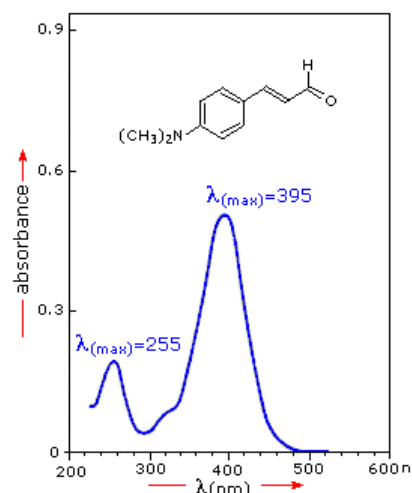


## Answer on Question #60261, Chemistry / General Chemistry

1. What are the other applications of u.v spectrometry give about 5 examples ?  
apart from beer Lambert law and using u.v spectrometry to determine a concentration

### Solution:

1. The wavelengths of absorption peaks can be correlated with the types of bonds in a given molecule and are valuable in determining the functional groups within a molecule. **The Woodward-Fieser rules**, for instance, are a set of empirical observations used to predict  $\lambda_{\max}$ , the wavelength of the most intense UV/Vis absorption, for conjugated organic compounds such as dienes and ketones. The spectrum alone is not, however, a specific test for any given sample. The nature of the solvent, the pH of the solution, temperature, high electrolyte concentrations, and the presence of interfering substances can influence the absorption spectrum. Experimental variations such as the slit width (effective bandwidth) of the spectrophotometer will also alter the spectrum. To apply UV/Vis spectroscopy to analysis, these variables must be controlled or accounted for in order to identify the substances present.
2. UV-Vis spectroscopy is also used in the semiconductor industry to measure the thickness and optical properties of thin films on a wafer. UV-Vis spectrometers are used to measure the reflectance of light, and can be analyzed via the Forouhi-Bloomer dispersion equations to determine the Index of Refraction ( $n$ ) and the Extinction Coefficient ( $k$ ) of a given film across the measured spectral range
3. qualitative determination of organic substances in pharmaceutical practice by plotting the absorbance =f(wavelength).



4. Study of completeness chemical reactions in the reaction reaction mixture to study on the fly. Widely used in industry.
5. Many minerals contain substances which begin to ultraviolet light to emit visible light. Each impurity shines in its own way, that makes it possible to determine the composition of the emission nature of the mineral.