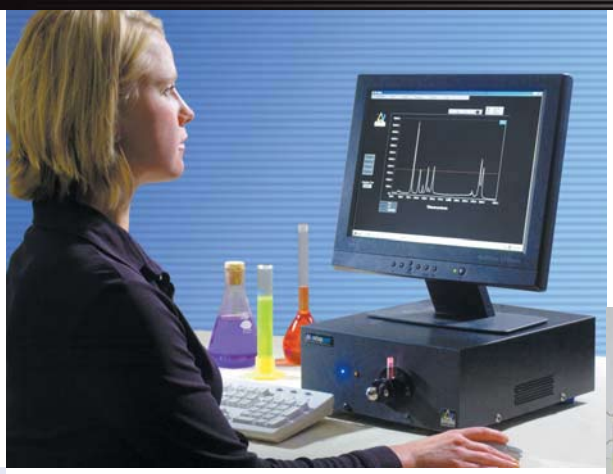
DeltaNu®

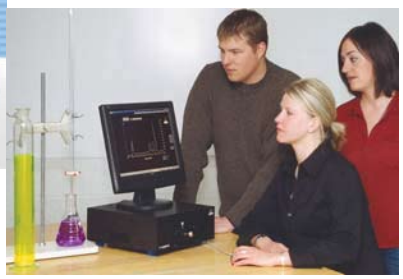
Discover the Raman Advantage!

Looking for something NEW to teach?

Need textbook results fast?



Add Raman to your lab!



Easy to use...

"The DeltaNu Advantage 633 has proven to be an extremely useful tool for qualitative analysis in my instructional and research laboratories. We have used it to identify both inorganic salts and organic compounds. Students readily learn how to operate the instrument and several samples can be analyzed in a short time period. The online laboratory procedures that DeltaNu provides are a very helpful resource and have assisted the incorporation of Raman spectroscopy into our program. I am very pleased withthe performance of the Advantage 633 and continually look to further its role in our laboratories.

– Richard Martoglio
DePauw University

Advantage 633™

Raman System

Delta Nu announces the Advantage 633 Raman system. It's perfect for academic settings and comes complete with:

- compact, sensitive and versatile Raman spectrometer
- computer with flat panel LCD monitor
- easy to use software
- complete package of accessories

and best of all … prepared labs!

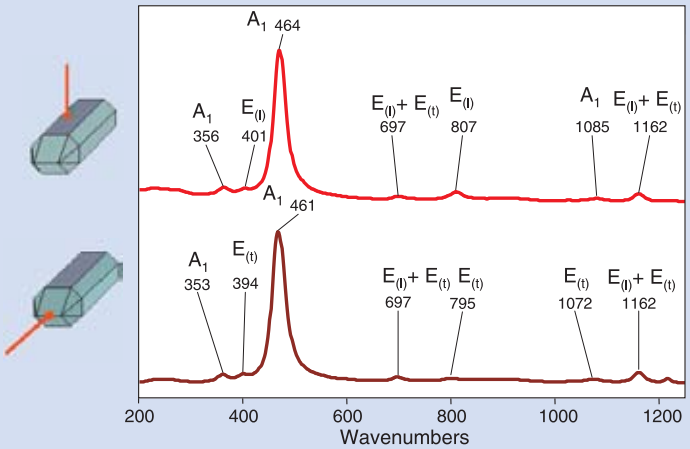
Easily demonstrate topics in analytical, physical, inorganic and organic chemistry. Choose from pre-tested experiments, each with instructor and student versions. Examples include:

- group theory and vibrational spectroscopy
- periodic trends using Raman spectroscopy
- adsorption isotherms using SERS
- instrumental analysis: ethanol & water

Crystal Clear...

Observation of the longitudinal ($E_{(l)}$) and the transverse ($E_{(t)}$) optical vibrations of quartz is an exciting way to explain crystal structure. The structure of quartz at room temperature is trigonal, with point symmetry of D_3, and nine atoms per primitive cell. There is a total of 3N=27 degrees of freedom with two acoustic vibrations and sixteen optical vibrations of $4A_1+4A_2+8E$ symmetry. The A_1 vibrations are Raman active, the A_2 vibrations are infrared active and the doubly degenerate E vibrations are both Raman and infrared active. Adjusting the direction of illumination you can observe the anisotropy in the $E_{(l)}$ and the $E_{(t)}$ vibrations of a simple quartz crystal. Rotating the crystal 90° changes the selection rules such that the 1085 cm^{-1} peak is forbidden and the peaks at 795 cm^{-1} and 1072 cm^{-1} become allowed.

Applications Series: #9 – Crystallographic Analysis



$E_{(t)}$ = Transverse vibrations of the symmetry species E.

$E_{(l)}$ = Longitudinal vibrations of the symmetry species E.

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