

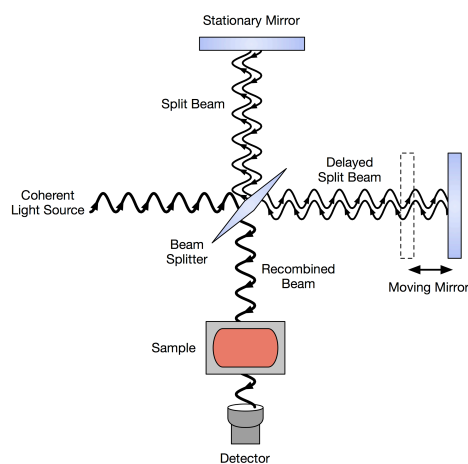
Dear Science Teacher,

I was awarded a grant from the National Defense Education Program (NDEP) this year to buy a transportable Fourier Transform Infrared Spectrometer (FTIR) specifically to take to AP Chemistry classes (though certainly not limited to AP chem). I bring it to the school, set it up, show the teacher how to use it, and then to leave it at the school for about a week at a time. The whole idea of the program is to expose students to very modern chemical instrumentation and let them use it. While it is no additional burden for the teacher, it is a GREAT way of having the basics of organic chemistry come alive for students. This state-of-the-art FTIR has an adapter called Attenuated Total Reflectance (ATR). With the ATR, you simply have to put a drop of liquid sample or a small amount of solid sample on the diamond waveguide and that's it! No sample prep! In fact, you can put swatches of fabric on the waveguide and it can tell the difference between nylon, polyester, wool, cotton.....! The "Fourier Transform" part means that it measures all wavelengths at the same time; it doesn't scan. It can take 32 spectra in about a minute, average them, and then display the spectrum. It is also able to do library searches of its spectra data bank to find matches. In a word - WOW! It really is easy to use and to interpret the spectra.

I've developed some curriculum/ideas for it. One of the activities I have that lead in to using the instrument is the "Chemistry of Smells." The students see how the smell of things is related to the structure of the organic molecule. The FTIR then allows them to see how chemists can actually distinguish between these molecules.

Interested Teachers ---- Please email me at -- Ronald.Furstenau@usafa.edu and provide the following information:

- Teacher's Name:
- Name of school
- Full Address of school
- Teacher's email
- Teacher's cell phone
- Name and grade level of class(es) where the FTIR would be used and number of sections
- Number of students
- Time frame (Starting Date and for how long)



Thanks, Ron Furstenau