# INFRA-RED SPECTROSCOPY

http://www.youtube.com/watch?v=DDTIJgIh86E

## 1. Watch the film and fill the gaps in the sentences:

a. A pair of atoms is joined by a ..... .....

b. The bond can ..... with different amounts of energy and the frequency that depends on ..... and the ..... ..... of the bond

c. Heavier atoms move more slowly and so give lower .....

d. Most bonds absorb energy in the ..... region of the ..... spectrum which corresponds to .....

e. All of IR instruments have a source of .....

f. The IR radiation goes by a sequence of ..... into the sample.

g. The radiation not absorbed by the sample arrives at a ..... The sample is placed on a ..... which is made of diamond.

h. The wave numbers of the significant peaks can be labeled onto the .....

i. These two peaks together may suggest that the sample might have .....

j. The cover is to prevent the ..... of the liquid samples.

## 2. Decide if these statements are true (T) or false (F).

a. Light atoms give lower frequencies.
b. At room temperature most bonds will vibrate with the highest possible amount of energy.
c. Some frequencies are absorbed more than others depending on what bonds are present in the sample.
d. You need more than 1 mg of the sample to make an IR spectrum.
e. The spectrum of a sample is obtained within a few minutes.
f. For a liquid sample the procedure is different.

## 3. Answer the questions:

a. Why do we use IR spectroscopy?

b. Why do we use wave-numbers?

c. What is Furrier transformation and why do we need it?

d. What does an interferometer consist of?

e. What kind of information does the interferogram hold?

f. Why is the presented area referred to as the fingerprint region?