Kansas State University DOE funded Analytical Equipment

The FTIR Spectrum 400 combines mid-infrared (MIR) and Near-infrared (NIR) spectroscopy in a single instrument with automatic beam splitter changeover.

Quickly obtained MIR and NIR spectra can provide rapid identification of key functional groups in sample molecules.

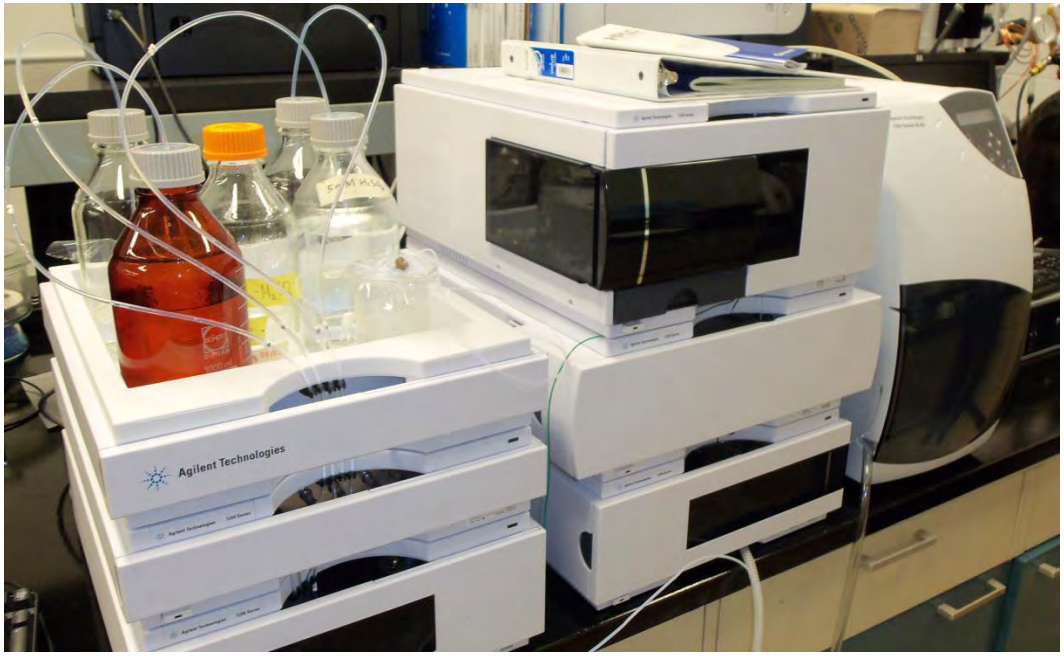
With proper column, temperature program, and corresponding standards, this Agilent GC/MS can qualitatively detect and quantitatively determine pg to ng levels of almost any volatile and semi-volatile compounds.

The Karl Fisher titrator can accurately and selectively determine small amount (mgs) of water quickly (min);

Very good for low moisture samples and troublesome samples with other moisture detamination methods.

Coupled with Agilent GC/MS, the CDS Pyroprobe 5250 is a very useful instrument to study thermal degrading products of organic materials at various heating conditions (heating temperature and duration).

The PerkinElmer 2400 element analyzer can accurately and precisely analyze µg to mg of either CHNS element or O content in organic materials when appropriately configured within 4-8 min.



With a powerful DAD (diode-array detector) and a sensitive universal mass ELSD (evaporative light scattering detector) this Agilent HPLC system can be used to analyze any compound that is less volatile than the mobile phase. In our lab, we mostly use HPLC for the analysis of monosaccharide sugars, organic acids, lipids, and inhibitors from biomass pretreatment, etc.

The IKA Calorimeter system C200 can be used to determine the calorific values of organic materials (solids or liquid) by complete combustion of the sample in pure oxygen environment.

The capacity of this C200 unit is max. 40,000 J of material, and each run takes approximately 8-17 min.