Matrix Isolation Fourier Transform Infrared Spectroscopy (MI-FTIR) Instrument

**Vacuum System** – removes air from cryostat, so it does not condense on the CsI window.

**Cryostat** – cools CsI window to ~10 K.

**UV Lamp** – shines UV light on the sample to induce photochemical reactions.

**FTIR Spectrometer** – shines infrared light through sample to measure the vibrational energies of the sample molecules.

**CsI Window** – where the matrix mixture gets deposited. UV light shines on the molecules in the matrix to induce photochemical reactions. Infrared light from the spectrometer shines through the window, to obtain vibrational spectra.

**Matrix mixture** – the sample molecule is mixed with argon gas and sprayed onto the cold CsI window.