HIGH–RESOLUTION FOURIER TRANSFORM INFRARED SPECTROSCOPY OF SMALL BORON–CONTAINING MOLECULES

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A series of small boron-containing molecules were synthesized in the gas phase using a tube furnace. High-resolution spectra of these species were recorded in either emission or absorption in the mid-infrared region using a Bruker IFS-125HR spectrometer. Our observations contain vibration-rotation bands of BO, the v_1 and v_3 bands of HBO, the v_1 and v_3 bands of HBS, the v_1 band of FBO, and the v_1 band of HBF_2. The vibrational bands of HOBO, BF_2OH and other boron-containing molecules may also be present. Ab initio calculations were performed at the MRCI level to assist in the vibrational assignments. Preliminary assignments of the spectra for these species will be reported.