THE REMPI STUDY OF BH IN THE RANGE OF 368-370NM

JASON CLARK, EDWARD R. GRANT, *Dept. of Chemistry, Purdue University, West Lafayette, IN, USA 47907*; LIMIN ZHANG, *Open Laboratory of Bond-Selective Chemistry, University of Science and Technology of China , Hefei, Anhui, P.R. China 230026*.

The mass-selected resonance-enhanced multi-photon ionization (REMPI) of BH in the spectral range of 368-372 nm has been studied. It is shown that the spectral peaks with ion mass 12, 11 and 10 can be assigned to the A1P (v'=2) - X 1S+ (v"=0) one-photon transition of 11BH and 10BH free radicals. With very few REMPI studies on BH, the 2-0 band transitions of A-X for 11BH and 10BH are first observed. By using a 40 K rotational temperature and approximately a 600 K background rotational temperature for BH free radicals, the spectra observed was simulated quite well. The observed isotopic shifts of A1P (v'=2) - X 1S+ (v"=0) band between 11BH and 10BH, which is between 11.7 and 13.0 cm-1, are mainly due to the vibrational isotope shifts.