THE PFI-ZEKE SPECTROSCOPY STUDY OF HfS^+ AND THE IONIZATION ENERGY OF HfS

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Spectroscopic data for the ground and low-lying states HfS^+ have been obtained using the technique of pulse field ionization - zero electron kinetic energy (PFI-ZEKE) spectroscopy. PFI-ZEKE spectra were recorded for the levels $X^2\Sigma^+$ (v=0-18), $^2\Delta_{5/2}$ (v=0-8) and $^2\Delta_{3/2}$ (v=0-3). Assignments of the electronically excited states of HfS^+ are based on CCSD(T) and DFT calculations with SDB-aug-cc-pVTZ basis set. Rotationally resolved spectra were recorded for the $X^2\Sigma^+$ (v=0) state using single rotational line excitation of the intermediate state. The ionization energy for HfS, term energies and molecular constants for the ground and low-lying states of HfS^+ will be reported.