HIGH RESOLUTION LASER INDUCED FLUORESCENCE SPECTROSCOPY STUDY OF RUTHENIUM MONOFLUORIDE, RuF

TONGMEI MA, WILTON L. VIRGO AND TIMOTHY C. STEIMLE, *Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ 85287-1604*.

The first detection of ruthenium monofluoride, RuF, is reported. A band system consisting of a strong Q-branch, moderately intense R-branch and a weak P-branch near 550 nm has been recorded both field-free and in the presence of a variable static electric field using high resolution laser induced fluorescence (LIF) spectroscopy. A supersonic molecular beam sample of RuF was generated by skimming the output of a free-jet expansion of the laser-ablated ruthenium solid sample in an SF_6/Argon mixture. The spectra exhibit large ^{19}F-magnetic hyperfine interaction in the excited state suggesting that the transition is a metal-to-ligand charge transfer. Progress on the analysis will be reported.