LASER SPECTROSCOPY OF NiBr: ROTATIONAL ANALYSIS OF THE $^2\Pi_{3/2} - X^2\Pi_{3/2}$ TRANSITION

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NiBr was produced in a supersonic free jet expansion in argon by the reaction of laser ablated nickel atom and bromoethane (C_2H_5Br) vapour. High resolution laser induced fluorescence spectra between 724 and 810 nm have been obtained using a c.w. single frequency Ti:sapphire laser. 8 bands have been recorded and 3 were assigned to the $^2\Pi_{3/2}$- $X\,^2\Pi_{3/2}$ transition. Transition lines from four isotopic molecules: $^{58}Ni^{79}Br$, $^{58}Ni^{81}Br$, $^{60}Ni^{79}Br$ and $^{60}Ni^{81}Br$, are observed and analysed. Least squares fit of measured lines of each isotopic molecule was performed. Molecular constants of all four isotopic molecules will be reported.