LASER SPECTROSCOPY OF YBr: ROTATIONAL ANALYSIS OF THE $C^1\Sigma - X^1\Sigma$ SYSTEM

J. W-H. LEUNG, JINGHUA DAI and A. S-C. CHEUNG, *Department of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong.*

The $C^1\Sigma$ - $X^1\Sigma$ system of YBr has been studied using a laser vaporisation/reaction free jet expansion source coupled with laser induced fluorescence spectrometer. YBr molecule was generated by ablating a yttrium rod in the presence of C_2H_5Br vapour. Laser induced fluorescence spectrum of the $C^1\Sigma$ - $X^1\Sigma$ system recorded consists of the (0,0), (0,1), (0,2), (0,3), (1,2), (1,3), (1,4) AND (2,4) bands. Each band displays the typical R and P branches, which is characterisation of a $^1\Sigma$ - $^1\Sigma$ transition. Transition lines of both the $Y^{79}Br$ and $Y^{81}Br$ were observed and analyzed. Least squares fit of all the available lines of each isotopic molecule was performed. Molecular constants of $Y^{79}Br$ and $Y^{81}Br$ will be reported.