

LASER SPECTROSCOPY OF THE $B^2\Sigma^+ - X^2\Sigma^+$ TRANSITION OF ZrN AND TiN

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The $B^2\Sigma^+ - X^2\Sigma^+$ (1,0) and (0,0) bands of TiN and the $B^2\Sigma^+ - X^2\Sigma^+$ (0,0) band of ZrN between 410.5 to 427.3 nm have been studied using laser induced fluorescence spectroscopy. Various small rotational perturbations have been found in these bands. Our analysis showed that the larger perturbations found in the $v = 1$ level of the $B^2\Sigma^+$ state of TiN could be ascribed to a $^4\Sigma^+$ perturbing state. A least squares fit of the data obtained has been performed. Molecular constants of the state of TiN and ZrN $B^2\Sigma^+$ and the perturbing $^4\Sigma^+$ state will be reported.

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