LASER INDUCED FLUORESCENCE SPECTROSCOPY OF SCANDIUM MONOIODIDE

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The laser induced fluorescence spectrum of scandium monoiodide (ScI) between 787 and 814 nm has been recorded. ScI molecule was produced by reacting laser vaporized Sc atoms with methyl iodide (CH_3I). Spectra of eleven vibrational bands of the $C^1\Sigma^+$ - $X^1\Sigma^+$ transition of ScI were obtained and analyzed. A merged least-squares fit of the measured line positions yielded accurate molecular constants for the upper levels of the $C^1\Sigma^+$ state and the v = 1 - 4 levels of the $X^1\Sigma^+$state. One vibrational band observed at 11627 cm^{-1} belongs to a sub-band transition of the $a^3\Delta$ state, which is found to be perturbed by the $X^1\Sigma^+$ state. Details of the perturbation and molecular constants obtained will be reported.