OPTICAL STARK SPECTROSCOPY OF YTTRIUM DICARBIDE, YCC

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Yttrium dicarbide is the only gas-phase metal dicarbide to be detected via an optical spectroscopic technique\(^1\). Here we report on our preliminary analysis of the optical Stark spectrum of the YCC. Numerous branch features in the \(K'=1-K''=0\) sub-band of the \(3^1_a A^2_{11}-X^2_{A_1}\) transition near 13225 cm\(^{-1}\) were recorded in the presence of a variable static electric field. A near linear tuning of the spectral features is observed indicating a near degeneracy of the asymmetry components of the excited state. The linear tuning was modeled to give \(\mu=1.5656\) D for the \((0,0,1)\) vibrational level of the \(A^2_{11}\) state.