ELECTRONIC TRANSITIONS OF PALLADIUM AND VANADIUM DIMER

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The laser induced fluorescence (LIF) spectrum of palladium dimer (Pd_2) in the visible region between 480 and 700 nm has been studied. Five vibrational bands were recorded and analyzed; they are assigned to a $^3\Pi_g$ - $X^3\Sigma_u^+$ system. The vibrational frequency of the ground $X^3\Sigma_u^+$ state has been determined to be 211.4 cm^{-1}. This is the first experimental observation of the LIF spectrum of Pd_2. In addition, the LIF spectrum of vanadium dimer (V_2) has also been studied; several new transition band systems were observed in the wavelength between 480 and 530 nm. The analysis of the spectra recorded for these two molecules will be presented.