LASER VAPORIZED SPECTRA OF A NEW RED SYSTEM OF SiN

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The spectrum has been recorded for first time in the region 575 - 940 nm along with known blue-green systems using second harmonic of pulsed Nd: YAG laser for vaporization of rotating SiN target inside the ablation chamber and computer controlled Spex TRIAX 320 m monochromator fitted with TE cooled ICCD as a detector.
It consists of 50 new bands assigned to $\Delta v = 0, \pm 1, \pm 2, -3, -4$ and -5 sequences a new band system with (0,0) band lying at 787 nm. The lower state vibrational constants are same as that of $A^2\Pi$ state reported by earlier workers. The vibrational constants of upper excited state are as follows:

$$v_e = 12752.4 \text{ cm}^{-1} \qquad \omega_e' = 945.3 \text{ cm}^{-1} \qquad \omega_e' x_e' = 6.20 \text{ cm}^{-1}$$
$$\omega_e'' = 1044.4 \text{ cm}^{-1} \qquad \omega_e'' x_e'' = 6.26 \text{ cm}^{-1}$$