THE $\tilde{B}^2\Sigma_u^+ - \tilde{X}^2\Pi_g$ SYSTEM OF SiNSi: INVESTIGATION OF ROVIBRONIC STRUCTURE AND RENNER-TELLER INTERACTION BY LASER INDUCED FLUORESCENCE SPECTROSCOPY.

Z. J. JAKUBEK, M. ZACHWIEJA[a], S. G. NAKHATE[b], and B. SIMARD, *Steacie Institute for Molecular Sciences, National Research Council, 100 Sussex Drive, Ottawa, Ontario K1A 0R6, Canada*.

The free SiNSi radical has been investigated in a molecular free jet by laser induced fluorescence excitation and dispersed fluorescence spectroscopy. The radicals have been generated by laser ablation of Si in the presence of NH_3 diluted (5%) in He. Excitation spectra of the $\tilde{B}^2\Sigma_u^+ - \tilde{X}^2\Pi_g$ system have been recorded in the $32600 - 36400$ cm^{-1} range. For most of the excitation bands, dispersed fluorescence spectra have been obtained. Very large Renner-Teller interaction has been observed in both electronic states. The excitation and dispersed fluorescence spectra have been vibrationally and rotationally analyzed. Rotational, vibrational, and Renner-Teller parameters will be presented.

[a]On leave from: Institute of Physics, University of Rzeszow, 35-310 Rzeszow, Poland
[b]On leave from: Spectroscopy Division, Bhabha Atomic Research Centre, Mumbai, Maharastra 400 085 India