LIF SPECTROSCOPY OF A $\Sigma - \Sigma$ TYPE BAND SYSTEM IN THE C_2H_2/ CS_2 DISCHARGE PLASMA

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New vibronic band system has been observed in the 21800−23000 cm^{-1} region by laser-induced fluorescence spectroscopy in a discharged supersonic jet of the C_2H_2 and CS_2 mixture gas. Several chemical tests indicate that the spectral carrier contains H, C and S atom(s). High-resolution spectra of these vibronic bands show $\Sigma - \Sigma$ type rotational structures. The origin band position and the effective rotational constants of the upper and lower levels have been determined to be T_0=21877.7706(7), B'_{eff}=0.04932(1) and B''_{eff}=0.05013(2)cm^{-1}, respectively. Based on the results of *ab initio* calculations, it is considered that bent HSCCS is the most probable candidate for the spectral carrier.

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