

## LASER-INDUCED FLUORESCENCE SPECTROSCOPY OF THE BaNC FREE RADICAL IN A SUPERSONIC JET

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Laser induced fluorescence spectra of the BaNC free radical in a supersonic jet have been recorded for the first time. A strong and rather complicated excitation spectrum was observed between 18000-19500  $\text{cm}^{-1}$ . A partial assignment has been made but uncertainties remain. In the corresponding dispersed fluorescence spectra, long progressions in the bending mode have been identified. The low frequency of this mode, 70  $\text{cm}^{-1}$  for the fundamental, demonstrates that BaNC is relatively floppy in the bending coordinate in its ground electronic state. The intensity profiles of the bending progressions suggest that BaNC undergoes a substantial change in its equilibrium bond angle on electronic excitation. This is most likely due to formation of a bent structure in the excited electronic state.