

## TIME-RESOLVED FOURIER TRANSFORM INFRARED EMISSION SPECTRA OF HNC/HCN

K. KAWAGUCHI, A. FUJIMOTO, *Department of Chemistry, Faculty of Science, Okayama University, Okayama 700-8530, Japan.*

A continuously scanning FT spectrometer (Bruker IFS 120 HR) has been applied for observing time-resolved spectra after pulse phenomena by a multi-sampling method with a help of a chip computer SX<sup>a</sup>. In the present study, we used a pulse discharge with a duration of 40  $\mu\text{sec}$  in a mixture of N<sub>2</sub> (120 mTorr) and CH<sub>4</sub> (15 mTorr) to produce HNC and HCN emissions which were monitored by the  $\nu_1$  bands (C-H stretch in HCN or NH stretch in HNC) with a resolution of 0.06  $\text{cm}^{-1}$ . The cell was cooled down by liquid nitrogen or dryice. Thirty data were collected to produce 30 interferograms with a 2  $\mu\text{sec}$  interval. The emission intensities from  $\nu_1 = 1$  of HCN and HNC decreased for 15  $\mu\text{sec}$  after turning off the discharge and increased later. The emission from  $\nu_1 = 2$  of HCN showed similar time profile as the  $\nu_1 = 1$  emission. However, the emission from  $\nu_2=2$  of HNC showed a different time profile.

---

<sup>a</sup>K. Kawaguchi, O. Baskakov, Y. Hosaki, Y. Hama, and C. Kugimiya, *Chem. Phys. Lett.* **369**, 293(2003)