

Fig. S-1

The observed and simulated  $\nu_4$  progressions of the 0-0 (a) and 3rd  $\nu_4$  spectra (b). The simulated band intensities are displayed as bars in the spectra, and the observed and simulated intensities are linked by guides. The simulated intensities are  $c_k^2$  calculated with  $D = 0.2$  and  $K = 0.1$  in Eq. (2), where the  $D = 0.2$  constant is larger than the best-fit one,  $D = 0.05$ . The horizontal broken lines indicate the  $I = 0$  standard level for the simulated intensities.

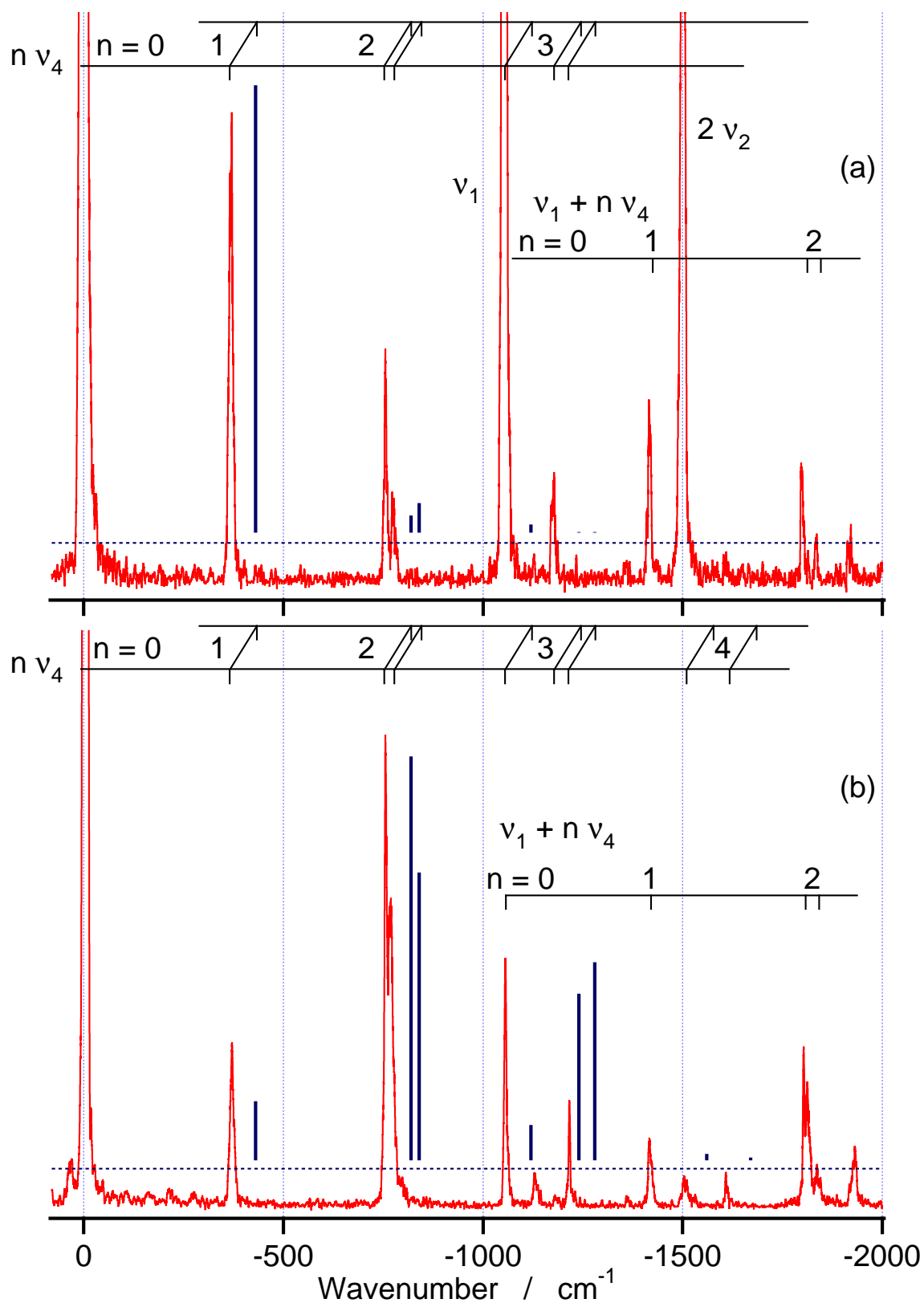


Fig. S-2

The observed and simulated  $\nu_4$  progressions of the 0-0 (a) and 3rd  $\nu_4$  spectra (b). The simulated band intensities are displayed as bars in the spectra, and the observed and simulated intensities are linked by guides. The simulated intensities are  $c_k^2$  calculated with  $D = 0.05$  and  $K = 0.2$  in Eq. (2), where the  $K = 0.2$  constant is larger than the best-fit one,  $D = 0.5$ . The horizontal broken lines indicate the  $I = 0$  standard level for the simulated intensities.