

LIF EXCITATION SPECTROSCOPY OF 3-PENTOXY AND *TERT*-PENTOXY RADICALS

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The laser induced fluorescence (LIF) excitation spectra of 3-pentoxyl and *tert*-pentoxyl radicals are obtained for the first time. The experiments were carried out in the wavelength range 345-400nm by laser photolysis of corresponding pentyl nitrites at 355nm. For 3-pentoxyl, 15 vibronic bands were labeled in three progressions with initial vibrational interval $578 \pm 6 \text{ cm}^{-1}$ corresponding C-O stretch mode. Two other unknown mode progressions have vibrational intervals of 596 ± 10 and $590 \pm 10 \text{ cm}^{-1}$. The transition origin was tentatively assigned at $26437 \pm 5 \text{ cm}^{-1}$. For *tert*-pentoxyl, the LIF spectrum consists 12 vibronic bands in three progressions. The C-O stretching vibration frequency and transition origin are derived to be 551 ± 10 and $25491 \pm 10 \text{ cm}^{-1}$. The initial vibrational intervals of other two unknown modes are 587 ± 10 and $631 \pm 10 \text{ cm}^{-1}$. New observations from LIF experiments on 10 additional large alkoxy radicals in the range from 335 to 400 nm are reported.