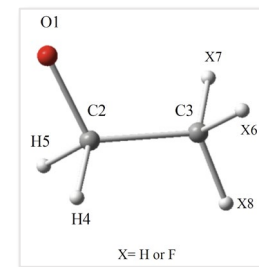
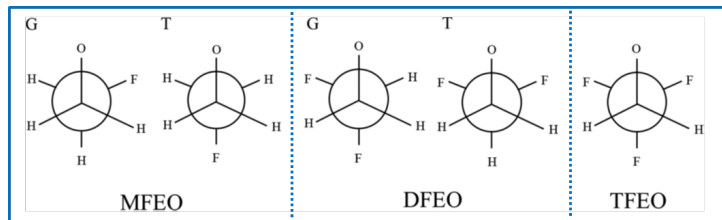
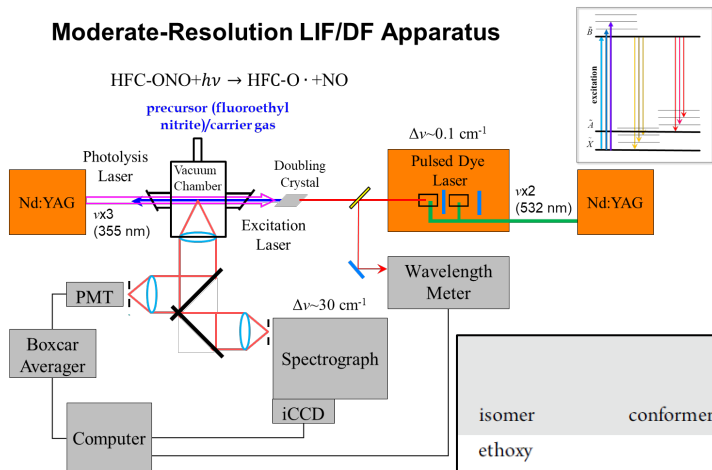


# Revealing Long-Range Substituent Effects in the Laser-Induced Fluorescence (LIF) and Dispersed Fluorescence (DF) Spectra of Jet-Cooled Fluorinated Alkoxy Radicals: $\text{CH}_x\text{F}_{3-x}\text{CH}_2\text{O}$ ( $x = 1, 2, 3$ )

## Moderate-Resolution LIF/DF Apparatus



isomer	conformer	C-O (Å)		relative energy (cm <sup>-1</sup> ) (comp)	$\Delta E^{\tilde{A}-\tilde{X}}$ (cm <sup>-1</sup> ) (comp)	$\Delta E^{\tilde{B}-\tilde{X}}$ (cm <sup>-1</sup> ) (comp)	$\Delta E^{\tilde{B}-\tilde{X}}$ (cm <sup>-1</sup> ) (expt)	$\tilde{\nu}_{\text{CO}}^{\tilde{X}}$ (cm <sup>-1</sup> ) (comp)	$\tilde{\nu}_{\text{CO}}^{\tilde{X}}$ (cm <sup>-1</sup> ) (expt)	$\tilde{\nu}_{\text{CO}}^{\tilde{B}}$ (cm <sup>-1</sup> ) (comp)	$\tilde{\nu}_{\text{CO}}^{\tilde{B}}$ (cm <sup>-1</sup> ) (expt)
		$\tilde{X}$	$\tilde{B}$								
ethoxy		1.36	1.60		411 <sup>b</sup>	29181	29948	1090	1070	628	603
MFEO	G	1.36	1.57	100.3		30587	29869	1092	1065	628	604
	T	1.36	1.57	0	1014	31467	30520	1075, 1100	1041, 1072	734	695
DFEO	G	1.37	1.55	0		32396	29183	1090	1053	758	603
	T	1.36	1.51	585.5	1181	31979		1098		645, 869	
TFEO		1.35	1.53		1681	33449	32506	1114	1076	794	756

\* At the (TD)-CAM-B3LYP/6-311++G(d,p) level of theory.

## LIF spectrum of $\beta$ -monofluoro ethoxy (MFEO)

