Electronic Supporting Information

Light activated CMP conjugated 8-aminoquinoline turn-on fluorescent Optode for Th^{4+} in aqueous environment

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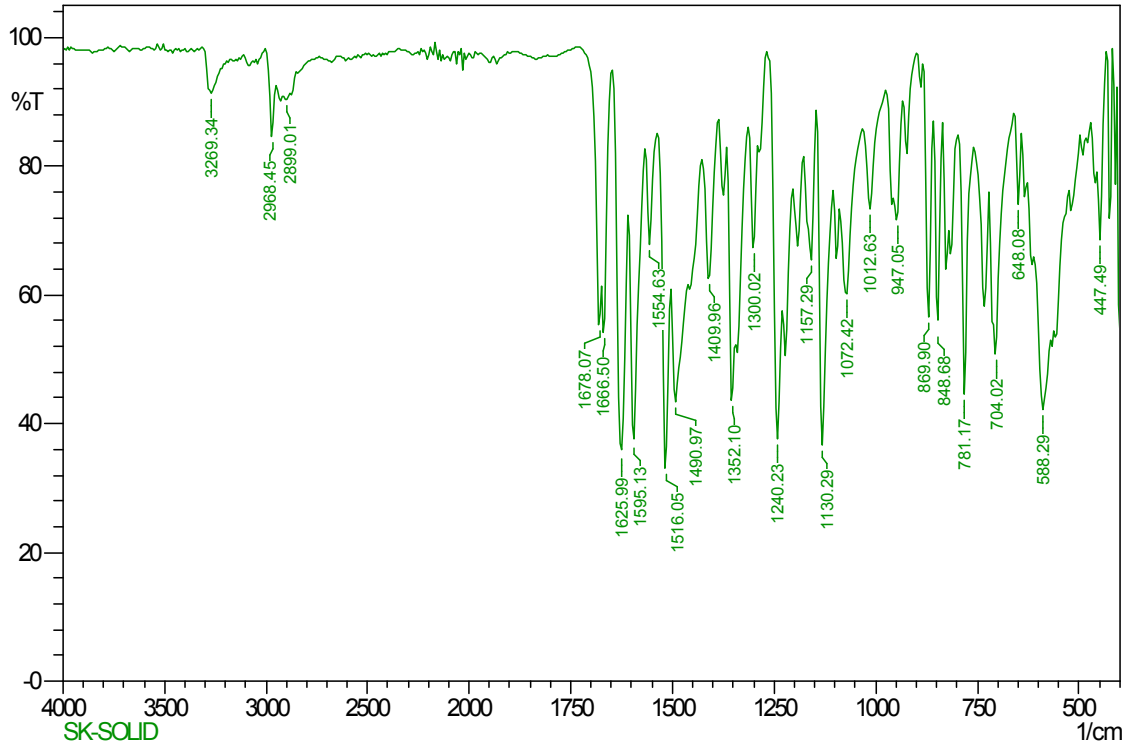


Figure 1S. FTIR of 2-chloro-N-(quinolin-8-yl) acetamide

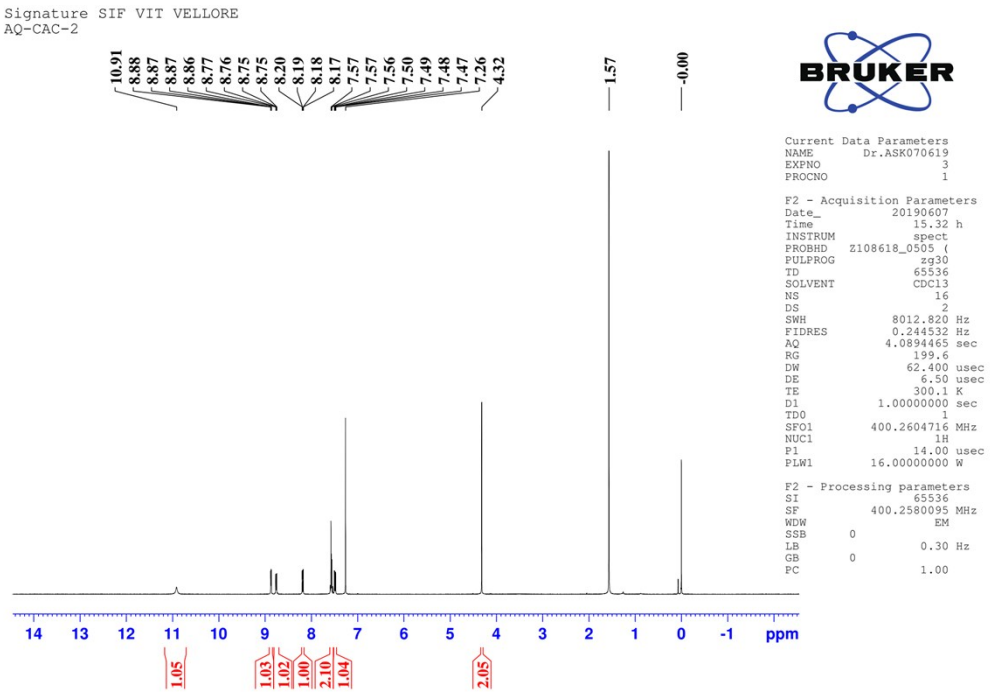


Figure 2S. ^{1}H NMR of 2-chloro-N-(quinolin-8-yl) acetamide

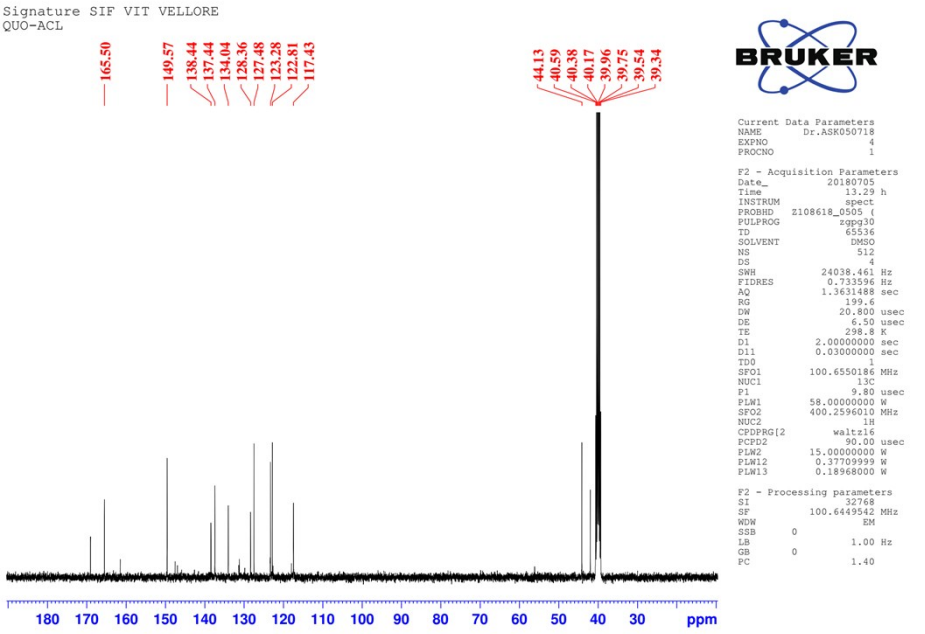


Figure 3S. ^{13}C NMR of 2-chloro-N-(quinolin-8-yl) acetamide

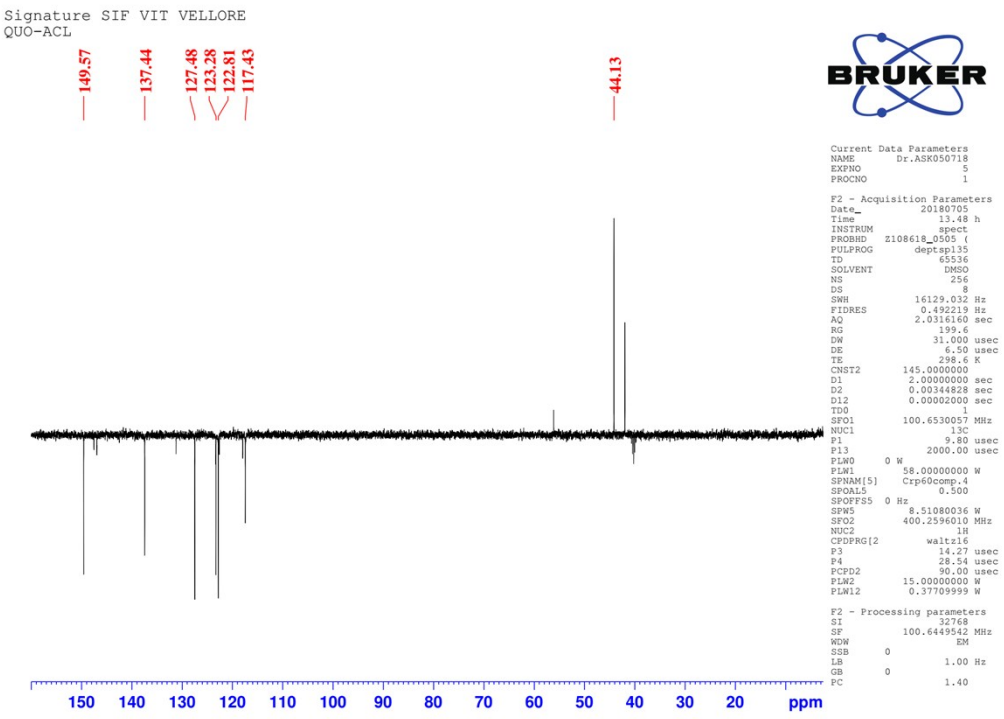


Figure 4S. DEPT-135 NMR of 2-chloro-N-(quinolin-8-yl) acetamide

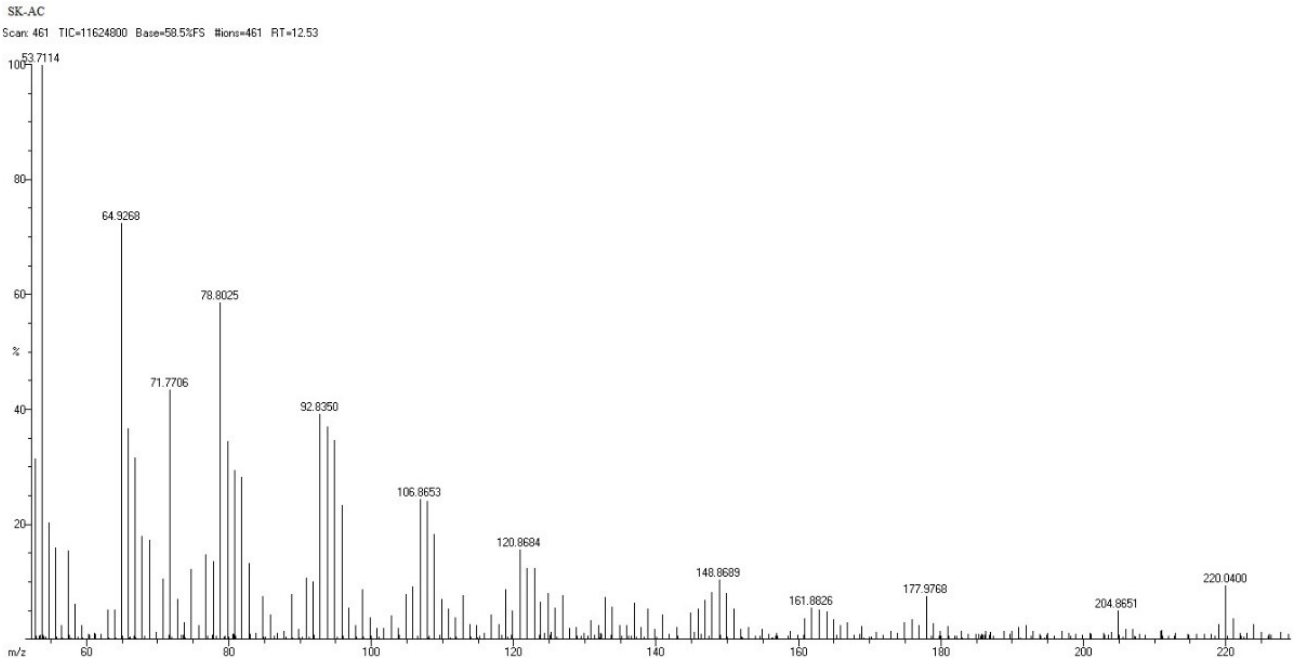


Figure 5S. HR mass of 2-chloro-N-(quinolin-8-yl) acetamide

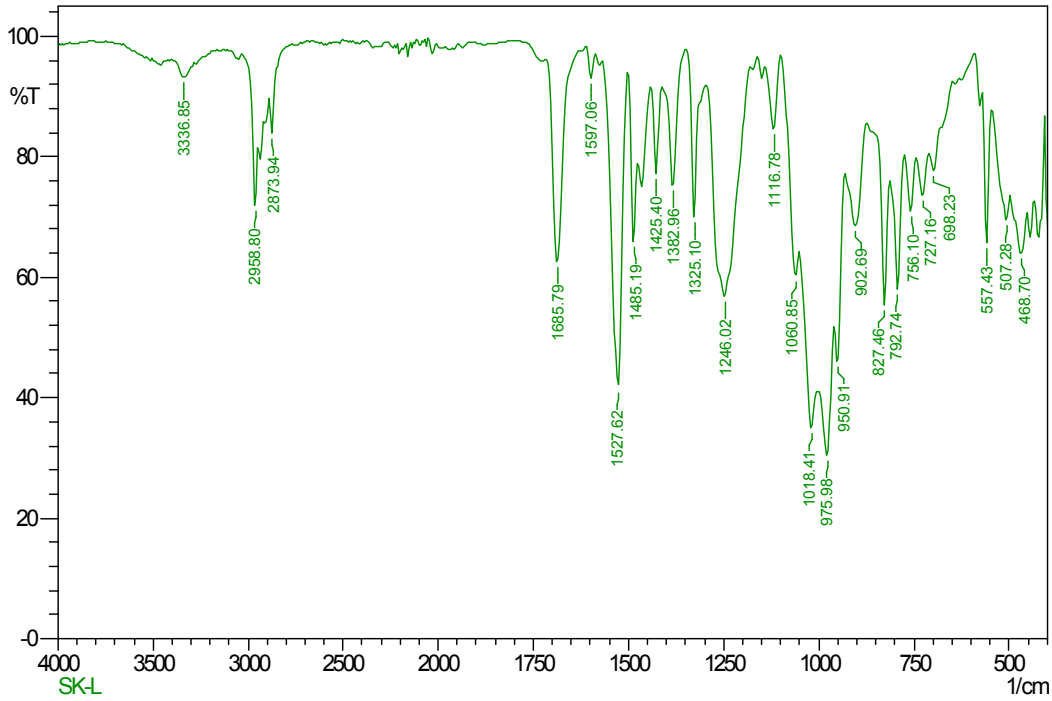


Figure 6S. FTIR of spectra **L**

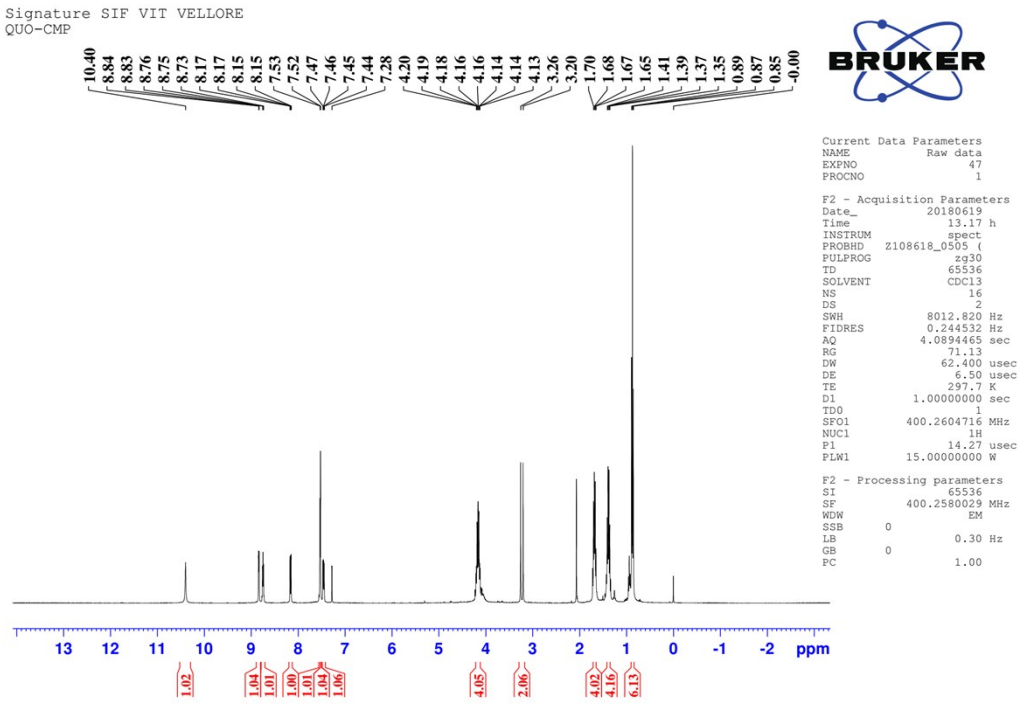


Figure 7S. ^{1}H NMR spectra of **L**

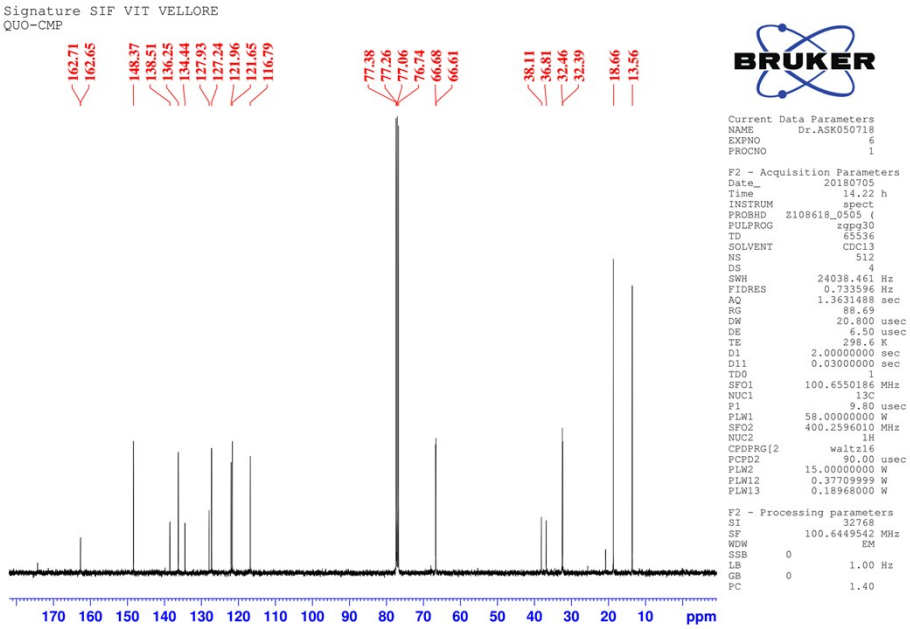


Figure 8S. ^{13}C NMR spectra of **L**

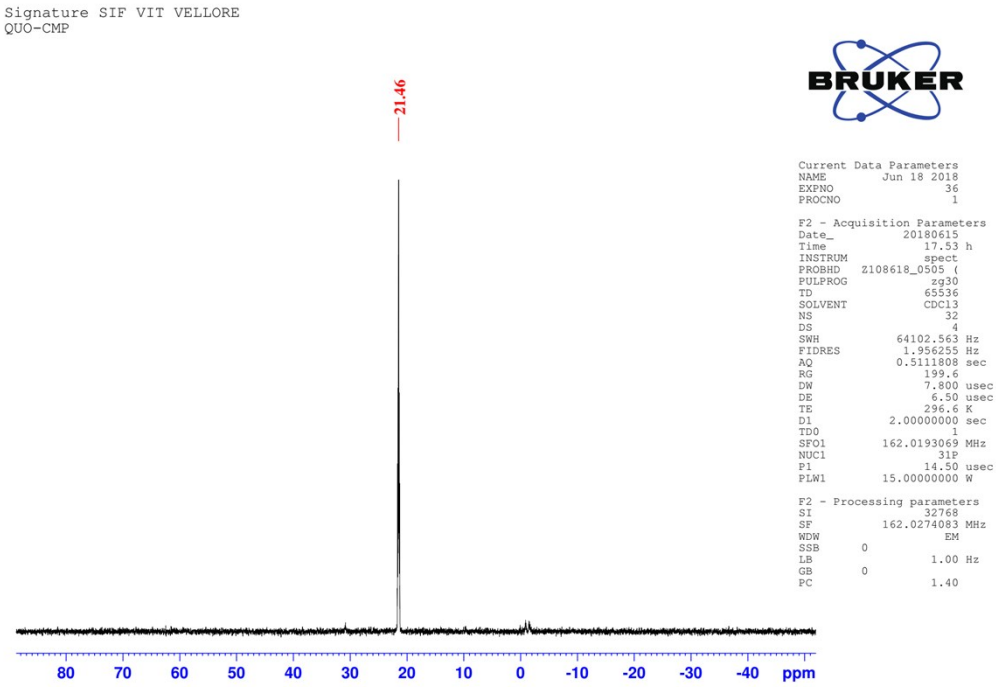


Figure 9S. ^{31}P NMR spectra of **L**

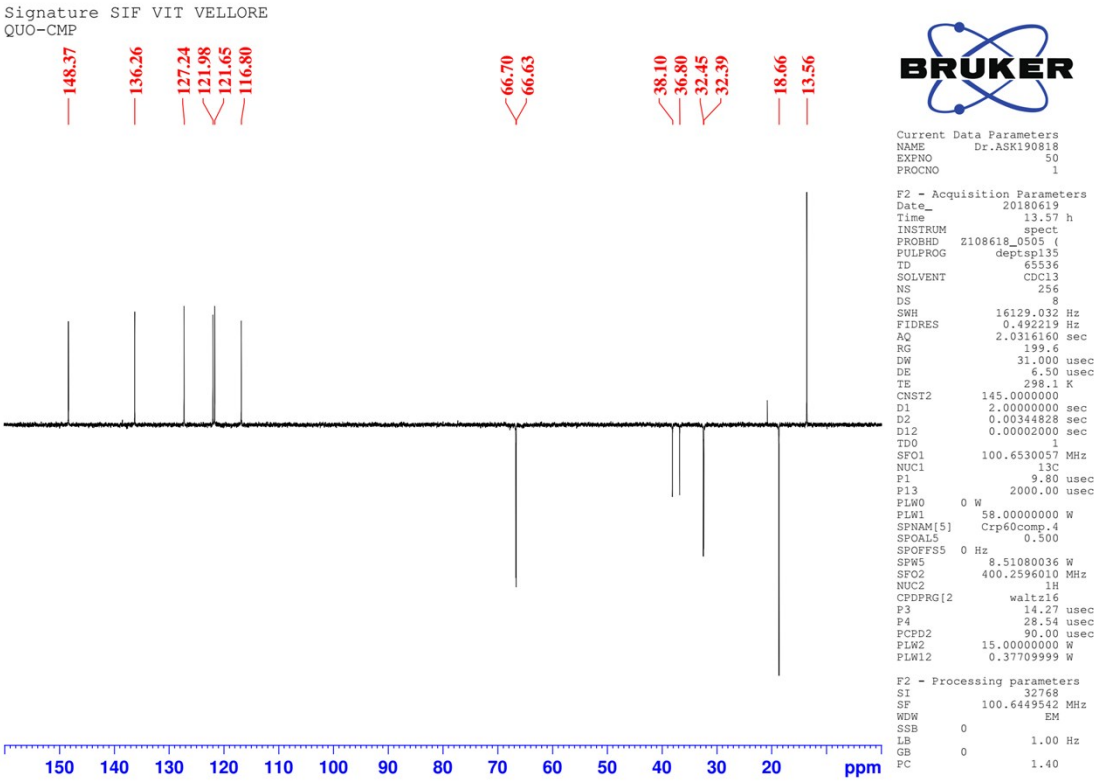


Figure 10S. DEPT-135 NMR spectra of **L**

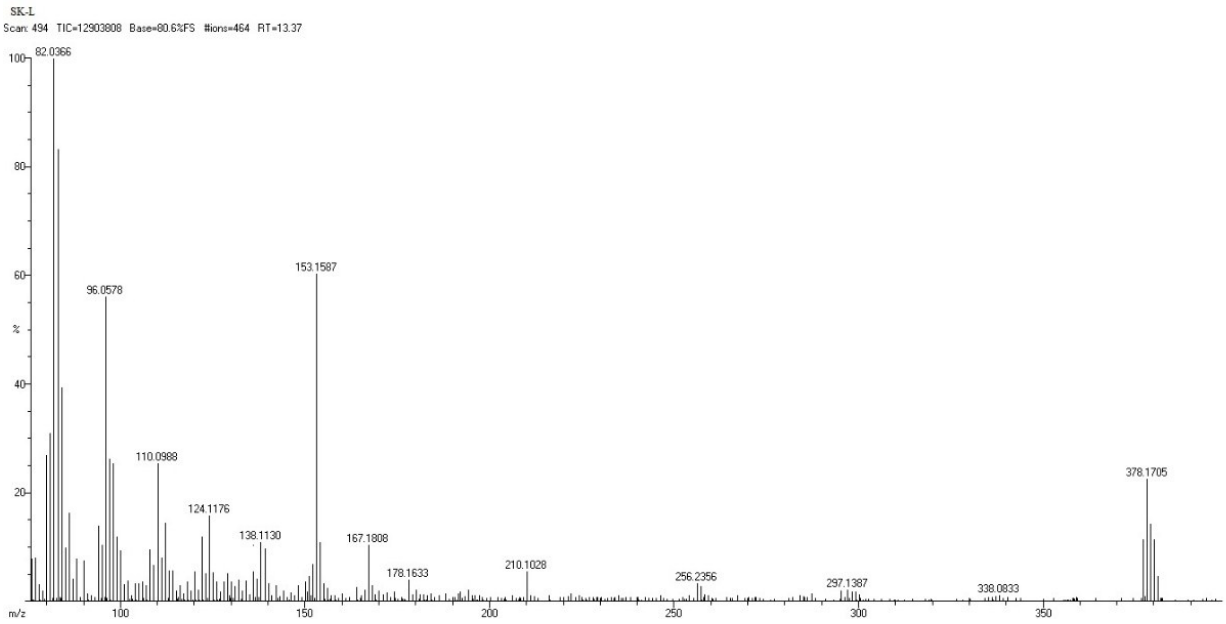


Figure 11S. HR mass spectra of **L**

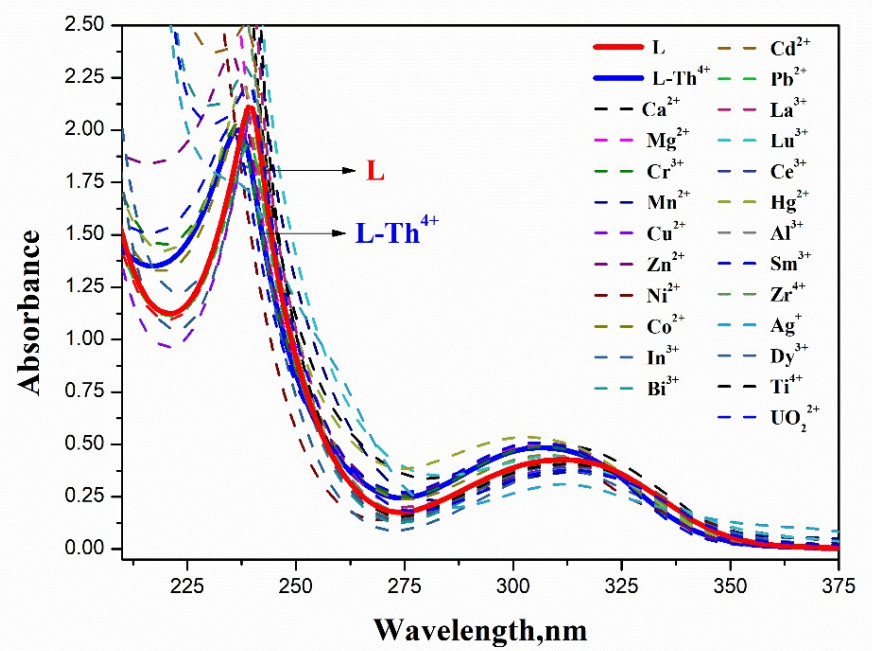


Figure 12S. UV-Vis spectral response of **L** with other metal ions in $CH_3CN:H_2O$ (9:1, v/v)

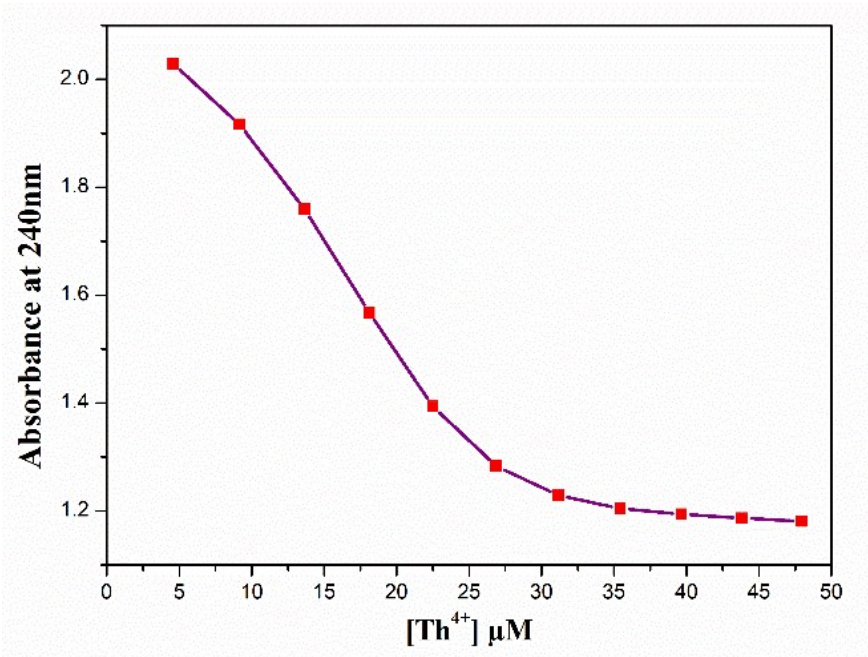


Figure 13S. Change in absorbance at 240 nm of **L** (50µM) with Th^{4+} (0-50µM)

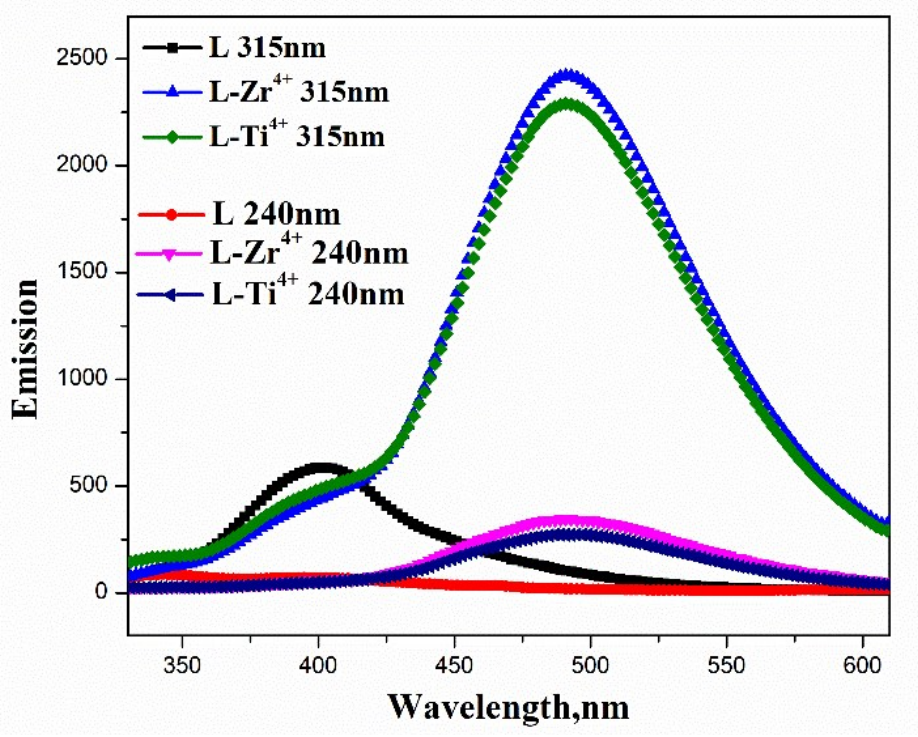


Figure. 14S. Fluorescence spectral change of **L**, **L-Zr^{4+}** and **L-Ti^{4+}** upon an excitation at 240 nm and 315 nm

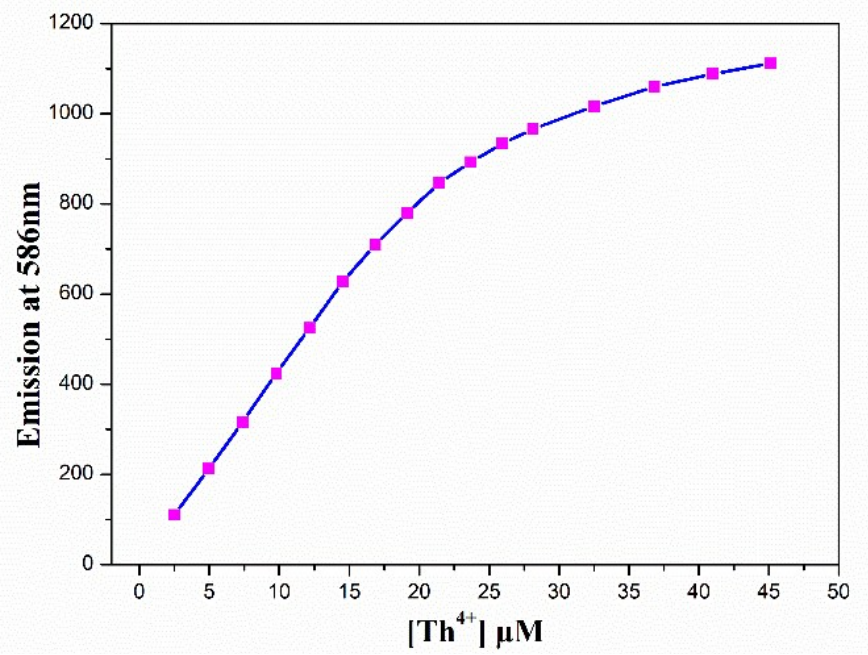


Figure 15S. Change in emission at 486 nm of **L** (50µM) with Th^{4+} (0-50µM)

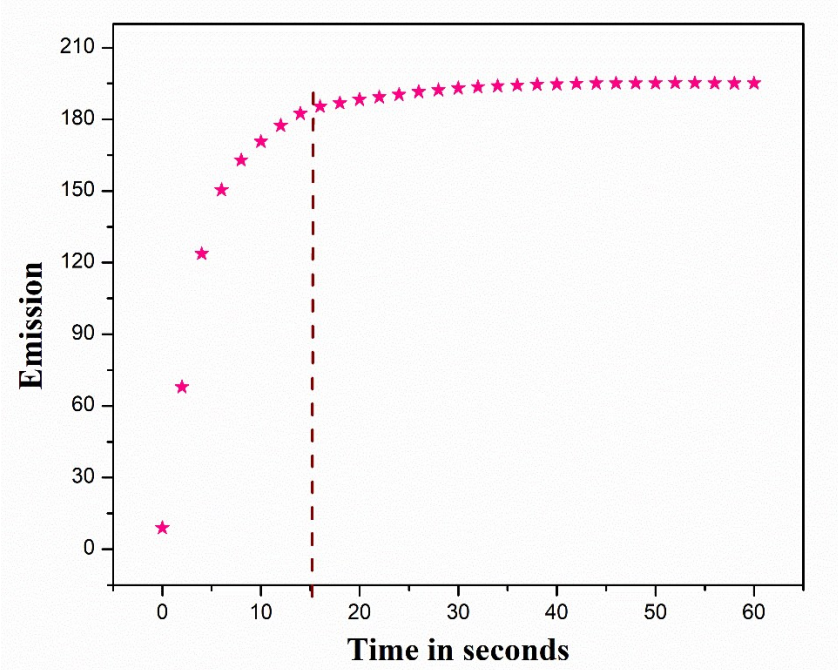


Figure 16S. Time response curve of optode-10

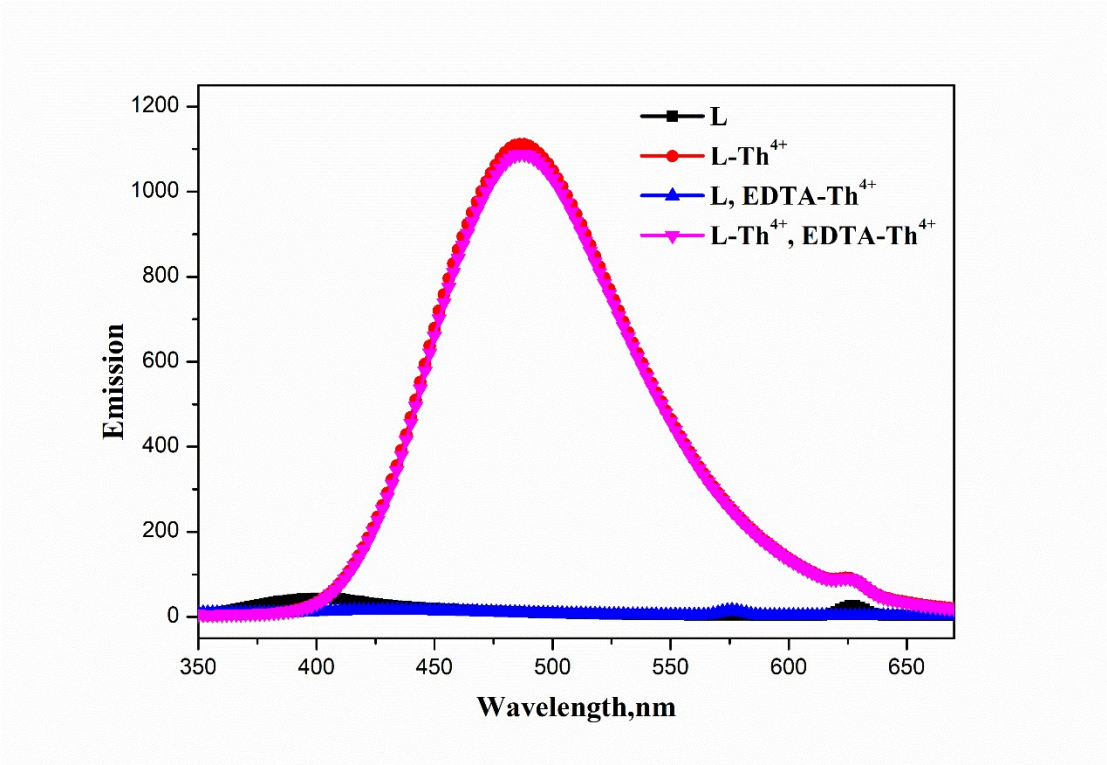


Figure 17S. Dynamic emission response of optode-10

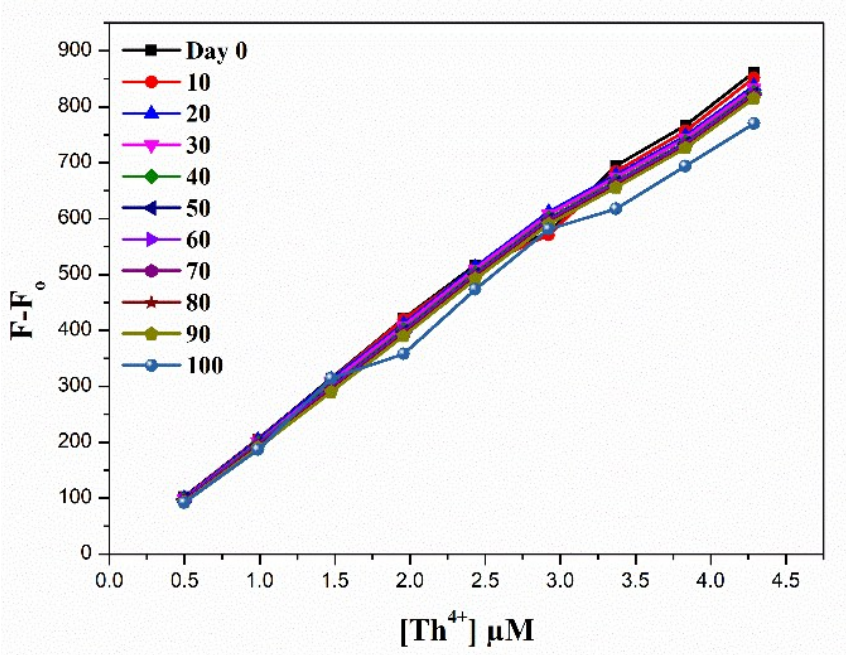
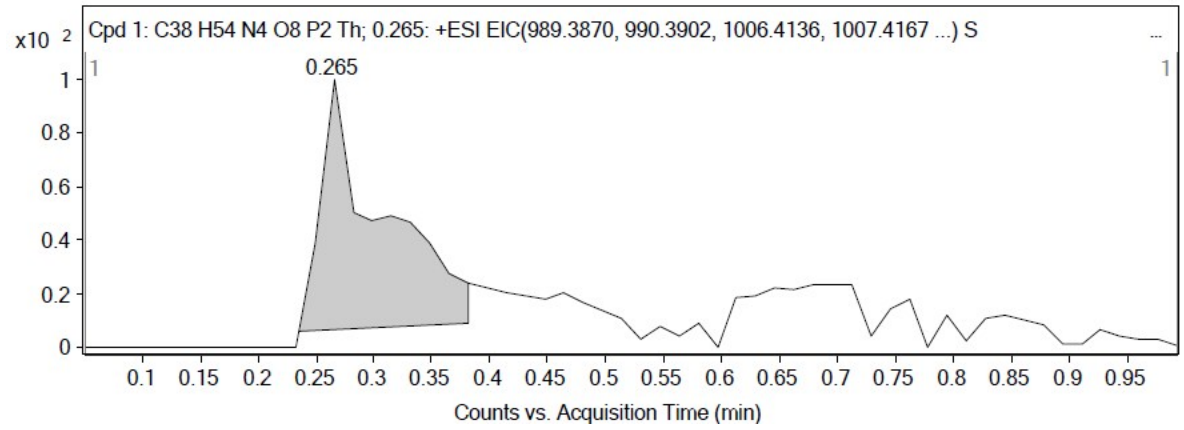
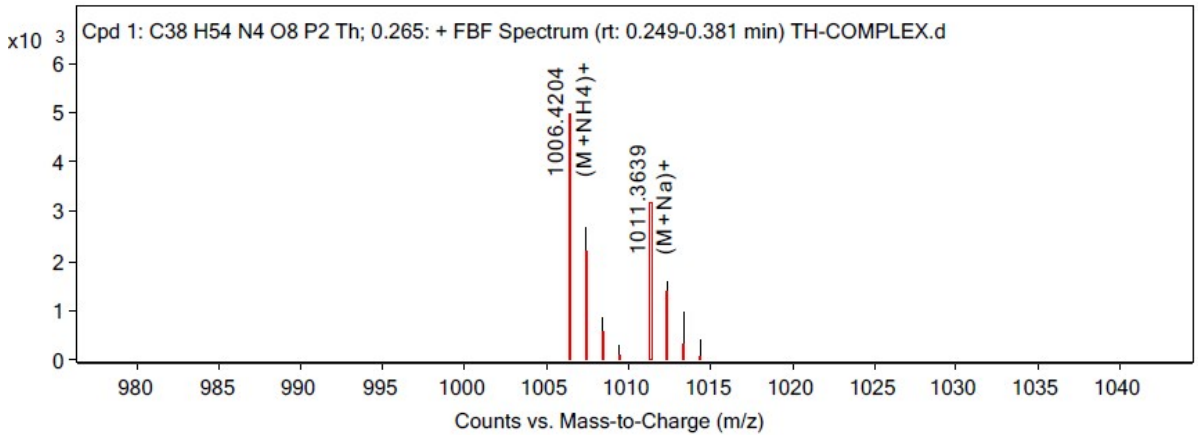
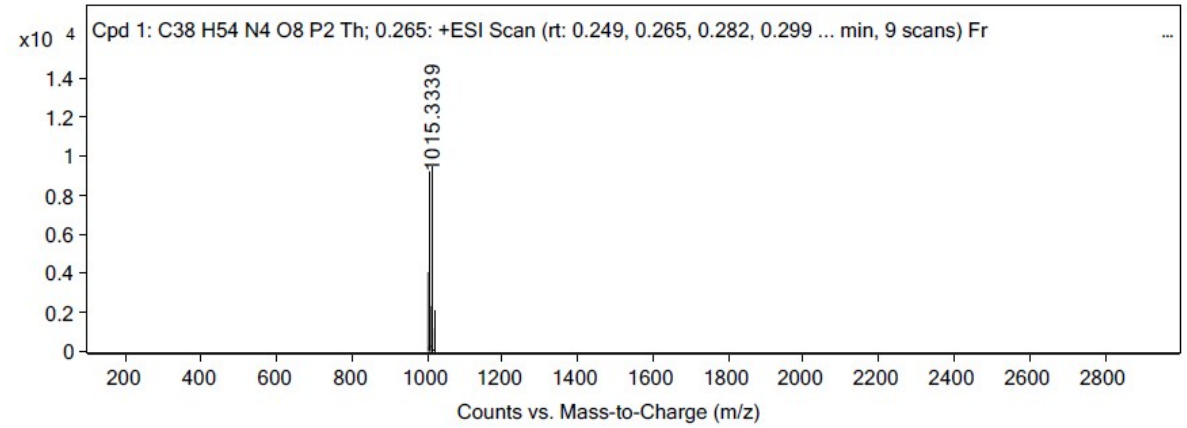


Figure 18S. Lifetime study of optode-10 sensor







MS Spectrum Peak List

m/z	z	Abund	Ion
1006.4204	1	3920.34	(M+NH4)+
1007.4059	1	2674.13	(M+NH4)+
1008.4062	1	874.67	(M+NH4)+
1009.3945	1	307.68	(M+NH4)+
1011.3639	1	2034.13	(M+Na)+
1012.3706	1	1576.83	(M+Na)+
1013.3636	1	947.59	(M+Na)+
1014.3923	1	388.76	(M+Na)+

Figure 19S. LC chromatogram and mass spectra of **L-Th** complex