

## SUPPLEMENTARY MATERIAL

### Three in One Sensor: A Fluorescent, Colorimetric and Paper Based Probe for Selective Detection of Mercury (II)

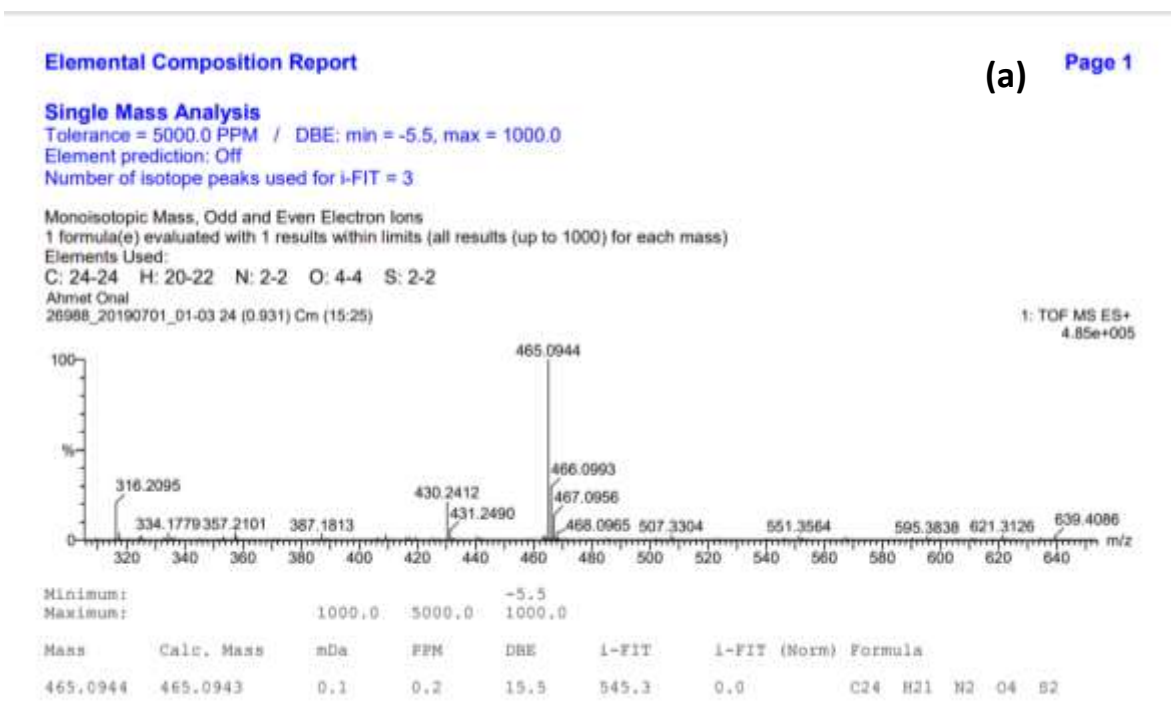
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## NEW JOURNAL OF CHEMISTRY



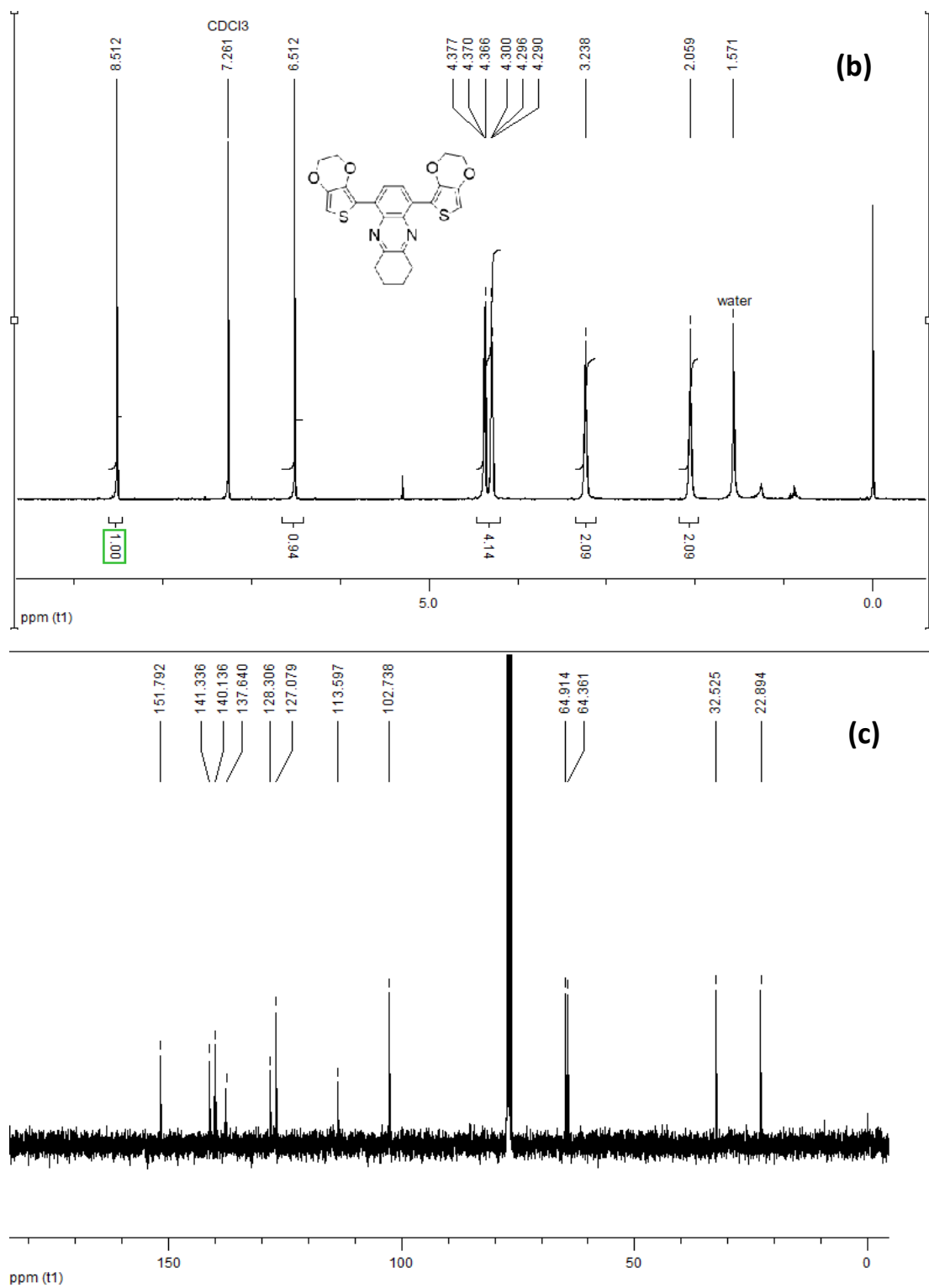
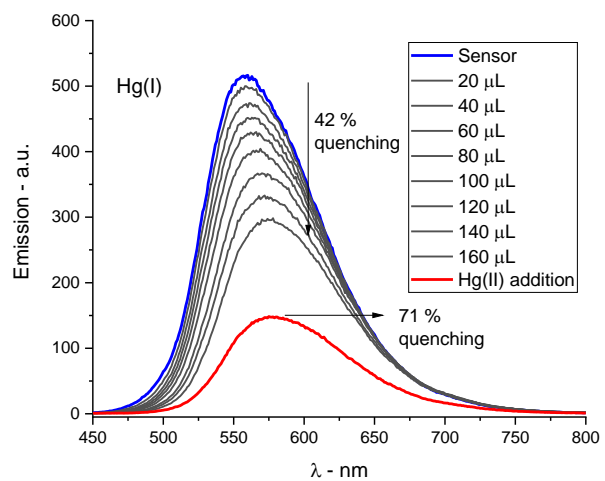
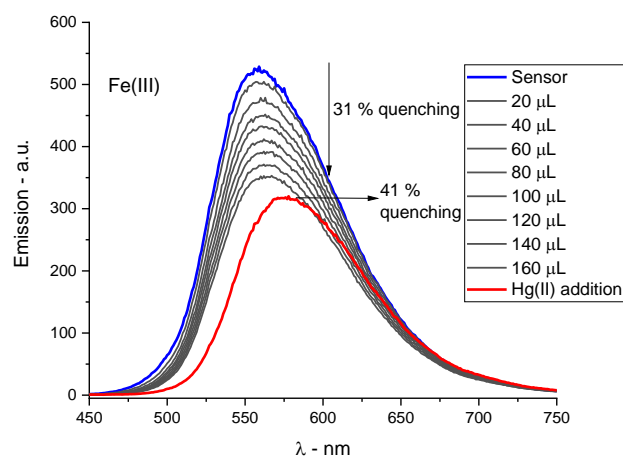
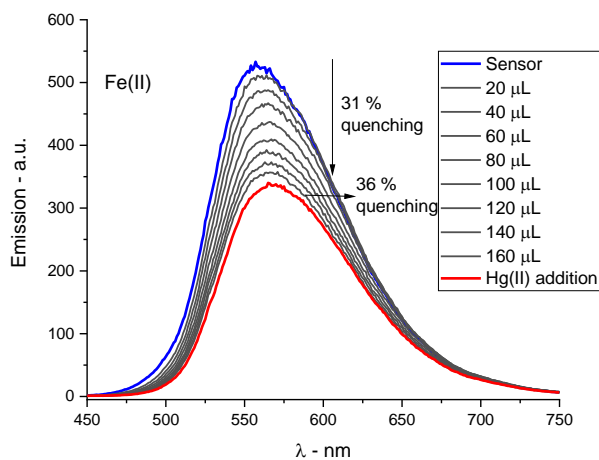
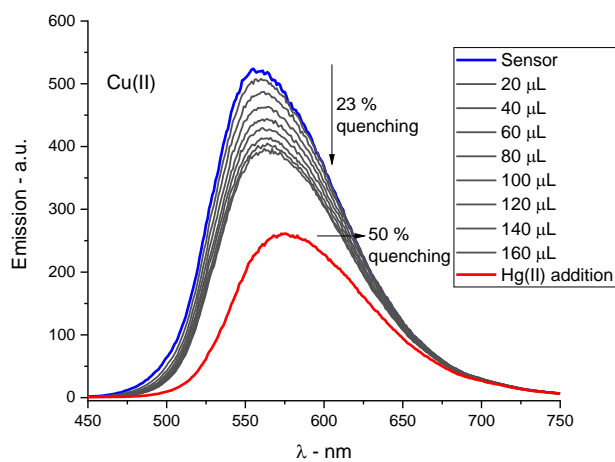
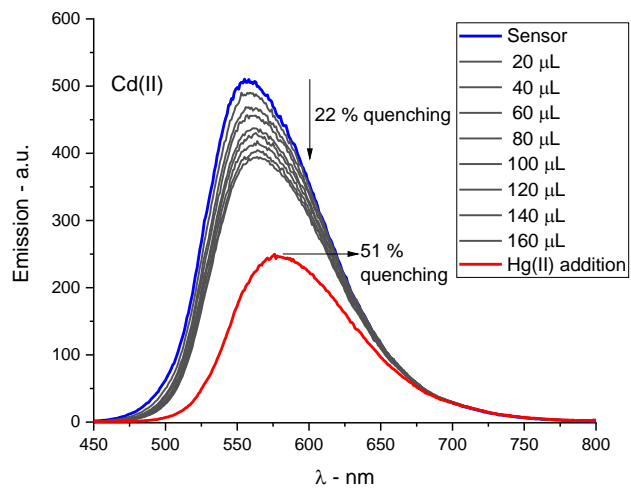
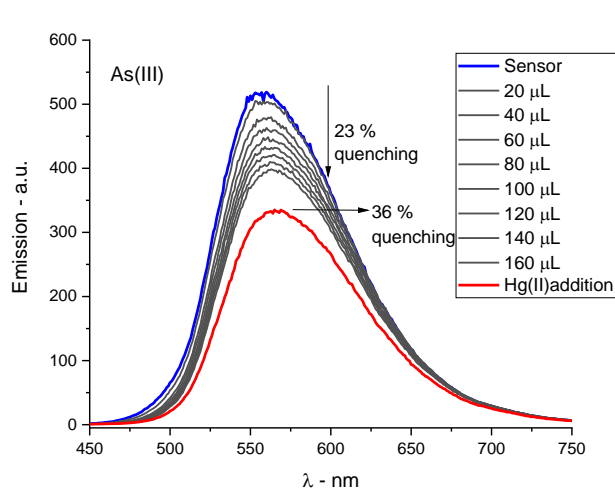


Figure S1. a) HRMS spectrum, b) <sup>1</sup>H-NMR spectrum, and c) <sup>13</sup>C-NMR spectrum of the sensor molecule.



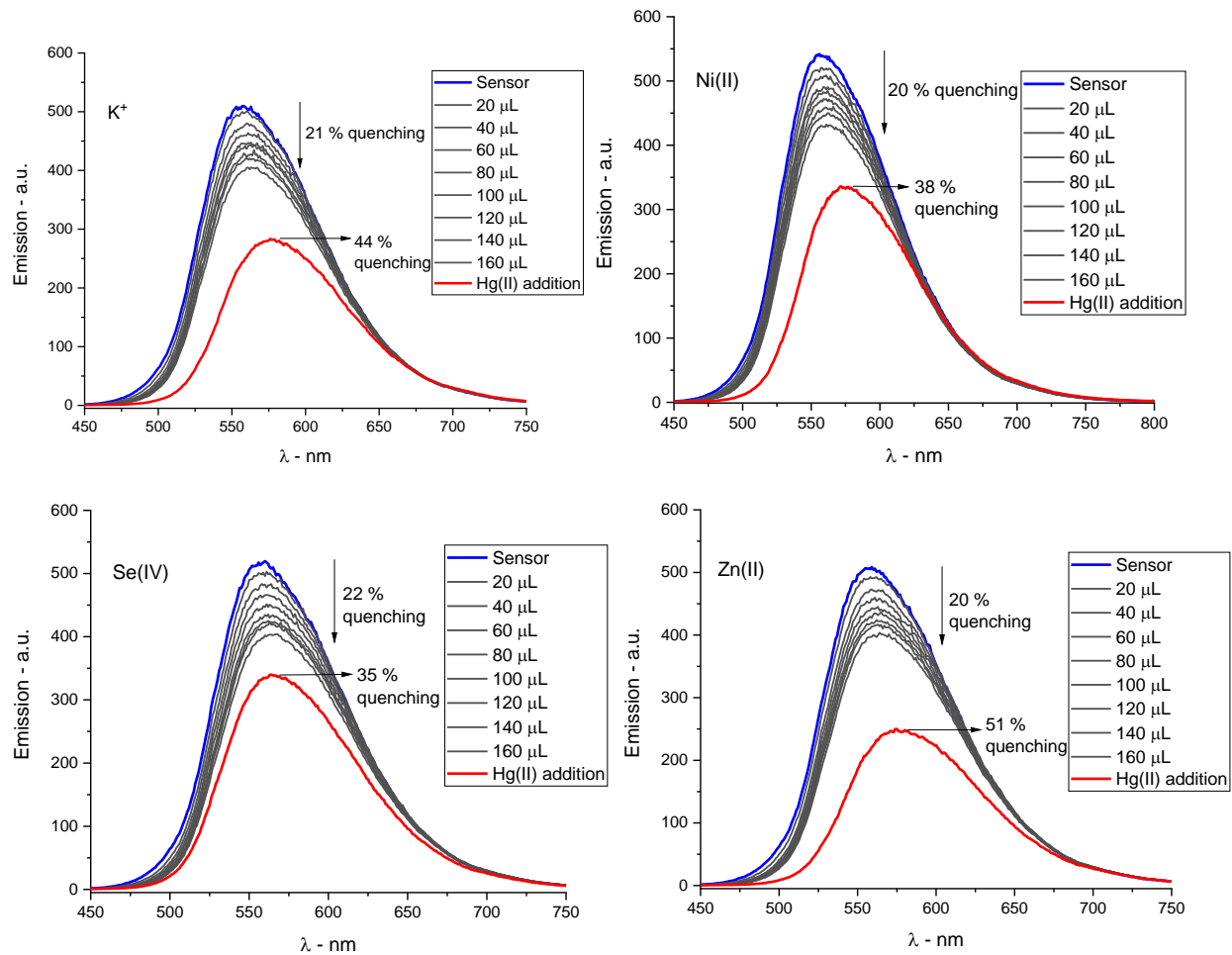


Figure S2. Change in the percent quenching amounts in the emission maximum of the sensor upon stepwise additions of 20-40-60-80-100-120-140 and 160  $\mu\text{L}$  (0.17, 0.33, 0.51, 0.67, 0.83, 1.00, 1.17 and 1.33 mol equivalents) for each ion, ( $\text{As}^{3+}$ ,  $\text{Cd}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Fe}^{2+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Hg}^+$ ,  $\text{K}^+$ ,  $\text{Ni}^{2+}$ ,  $\text{Se}^{4+}$  and  $\text{Zn}^{2+}$ ), and the obtained additional quenching in the emission spectra upon addition of 0.6 eq.  $\text{Hg}^{2+}$ .

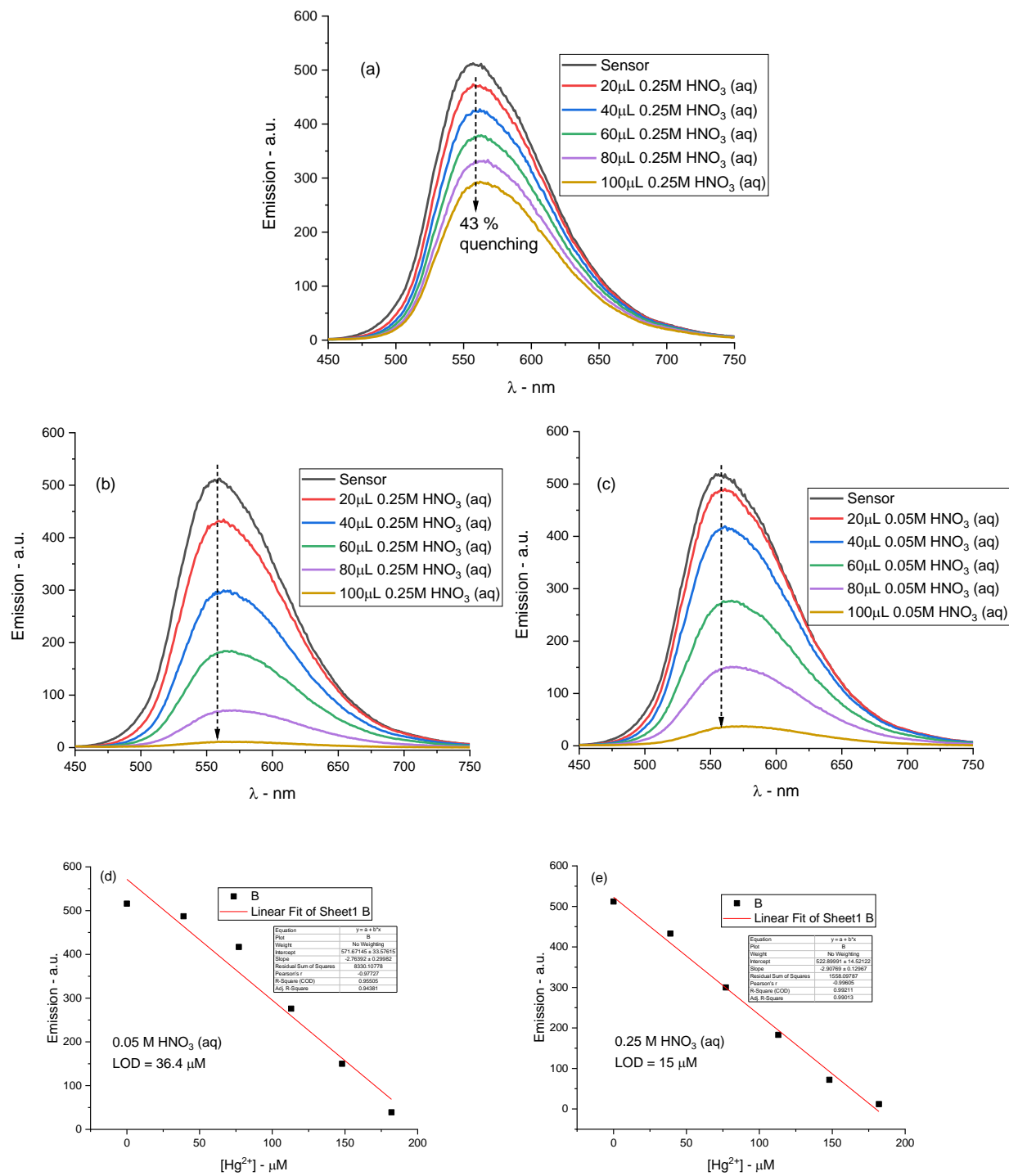


Figure S3. a) Emission spectra collected during the titration of 0.24 M sensor with 0.25 M HNO<sub>3</sub> (aq), b) Emission spectra collected during the titration of 0.24 M sensor with Hg<sup>2+</sup> in 0.25 M HNO<sub>3</sub> (aq), c) Emission spectra collected during the titration of 0.24 M sensor with Hg<sup>2+</sup> in 0.05 M HNO<sub>3</sub> (aq), d) Linear fitting analysis using data in (c), d) Linear fitting analysis using data in (b).

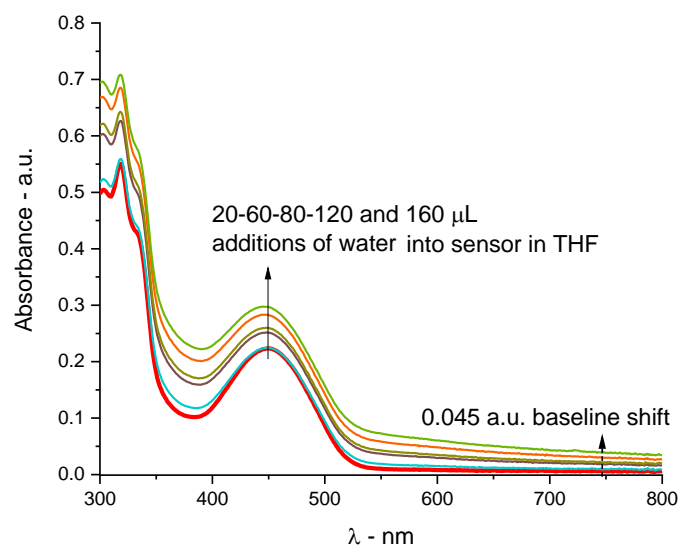


Figure S4. The control experiment for UV-Vis titration of the 0.24 mM sensor with deionized water.

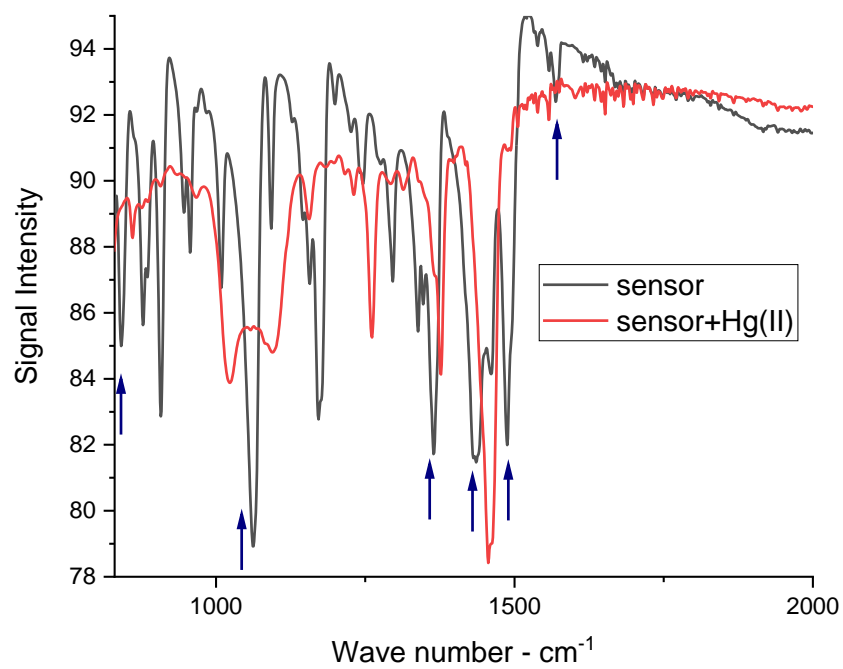


Figure S5. FTIR spectrum of sensor before (black) and after (red) addition of  $\text{Hg}^{2+}$ .

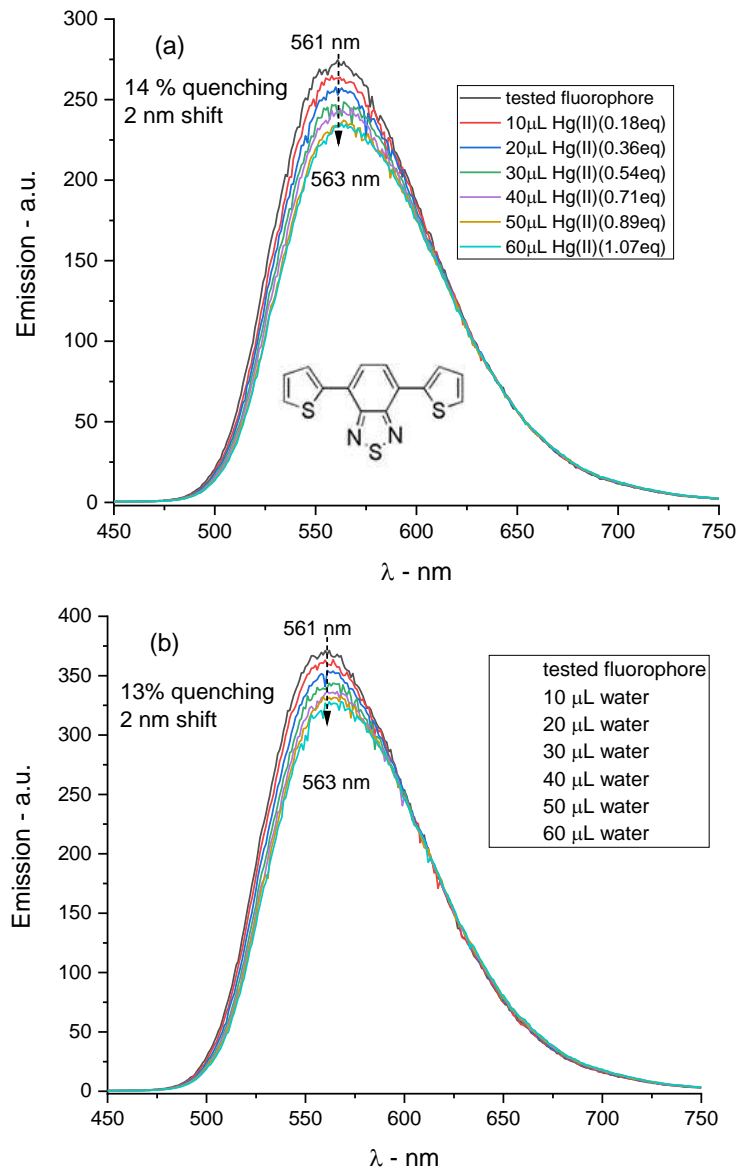


Figure S6. Emission spectra collected during the titration of tested fluorophore with 10 mM  $\text{Hg}^{2+}$ , b) Emission spectra collected during the titration of tested fluorophore with water (control experiment). Inset of a: Chemical structure of the tested fluorophore.