

**Selective sensing of Hg²⁺ ions by optical and colorimetric methods using gold
nanorods embedded in functionalized silicate sol–gel matrix**

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SUPPLEMENTARY INFORMATION

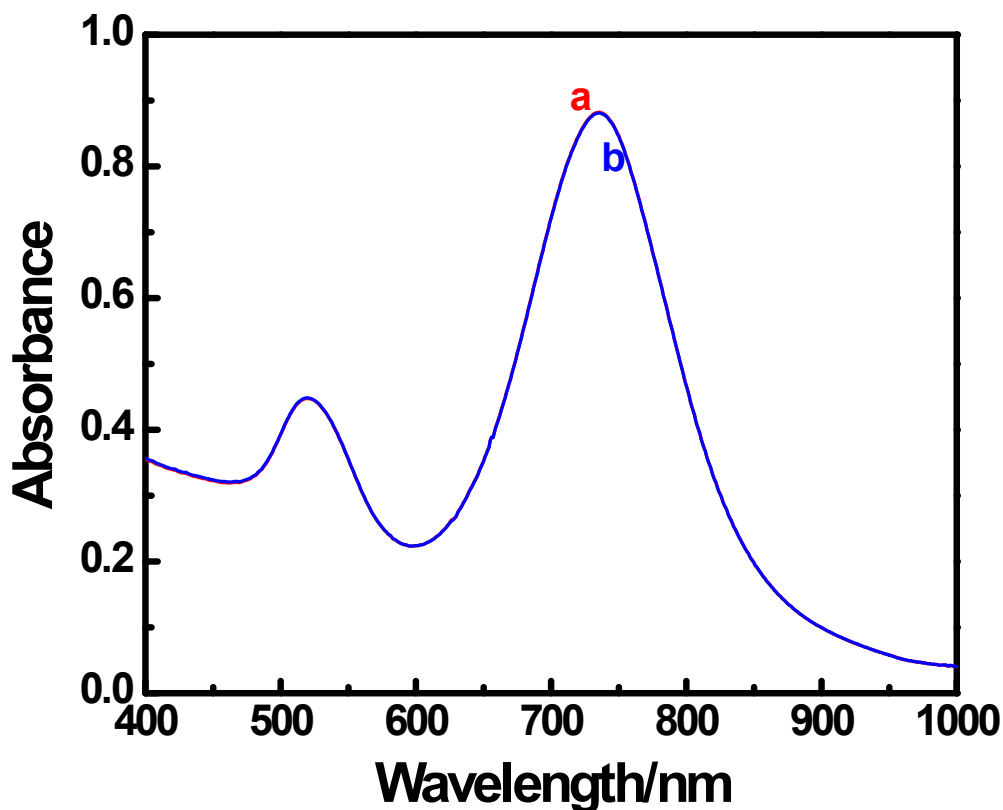


Fig. S1 Absorption spectra of Au-TPDT NRs (a) and Au-TPDT NRs after the addition of 5 μ L of water (b).

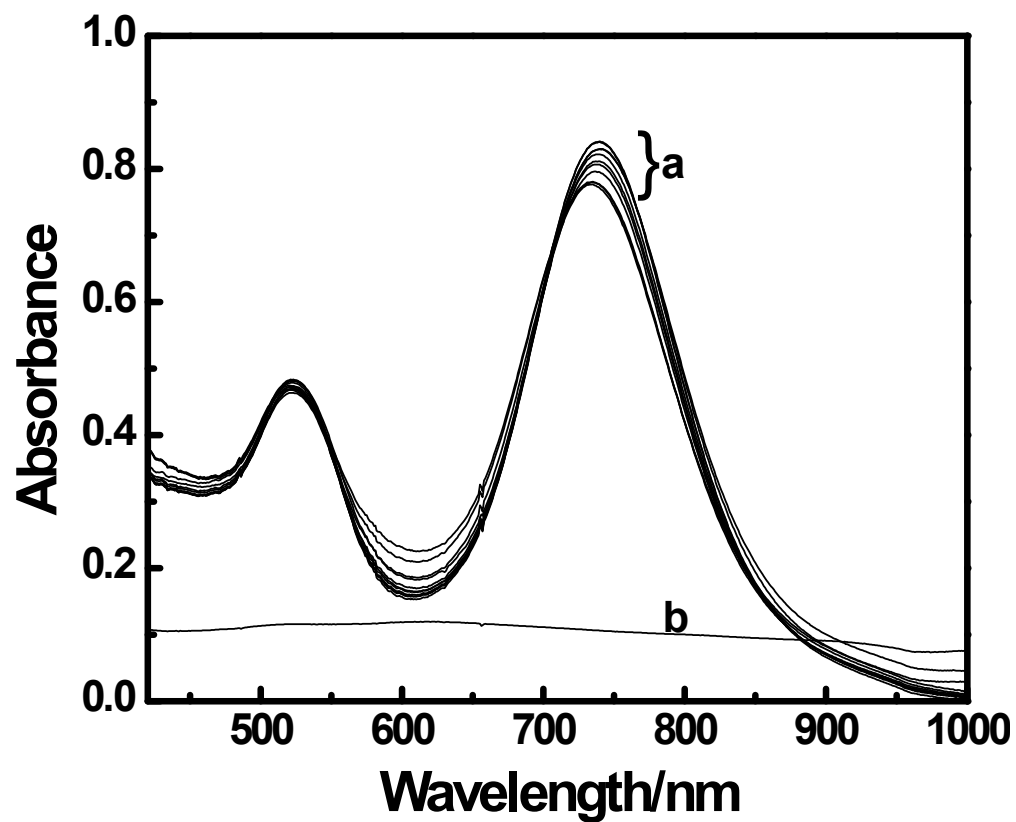


Fig. S2 Absorption spectral changes of LSPR band upon each addition of 50 μM of other environmentally relevant metal ions one by one (Cd^{2+} , Pb^{2+} , Mg^{2+} , Ca^{2+} , Zn^{2+} , Mn^{2+} , Co^{2+} , Fe^{2+} , Fe^{3+} , Cu^{2+} and Ni^{2+}) (a) in the same Au-TPDT NRs solution as a mixed solution and finally upon the addition of 30 μM Hg^{2+} ions (b) to the same Au-TPDT NRs solution.

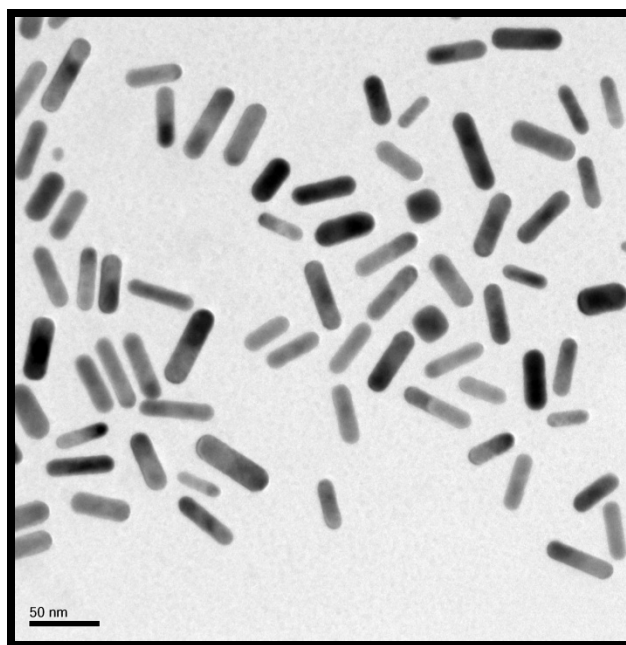


Fig. S3 TEM image of Au-TPDT NRs after the addition of 8 μM Hg^{2+} ions.

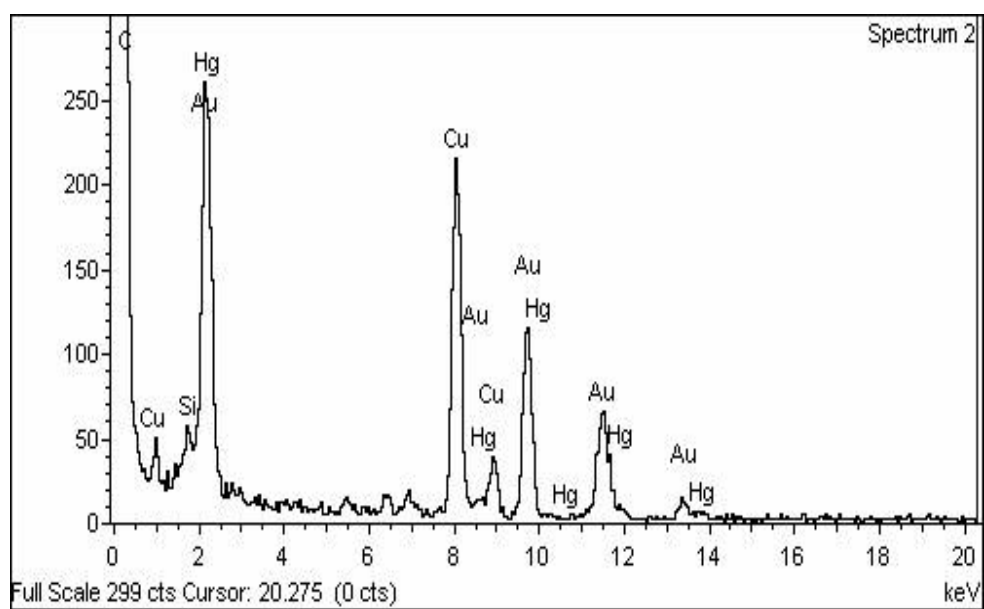


Fig. S4 EDS analysis of Au-TPDT NRs after the addition of 20 μM Hg^{2+} ions.

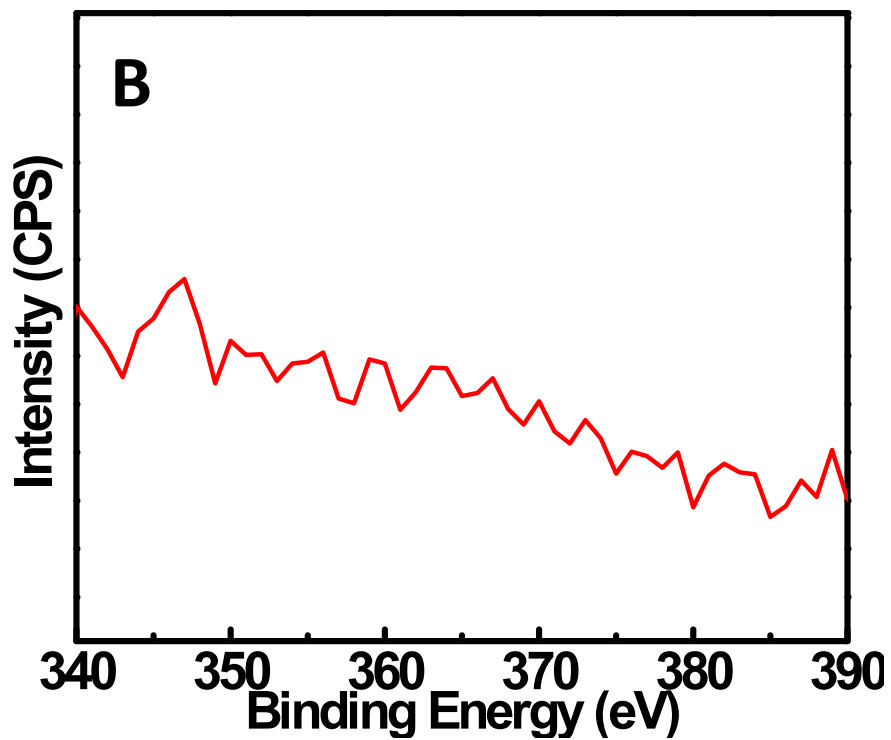
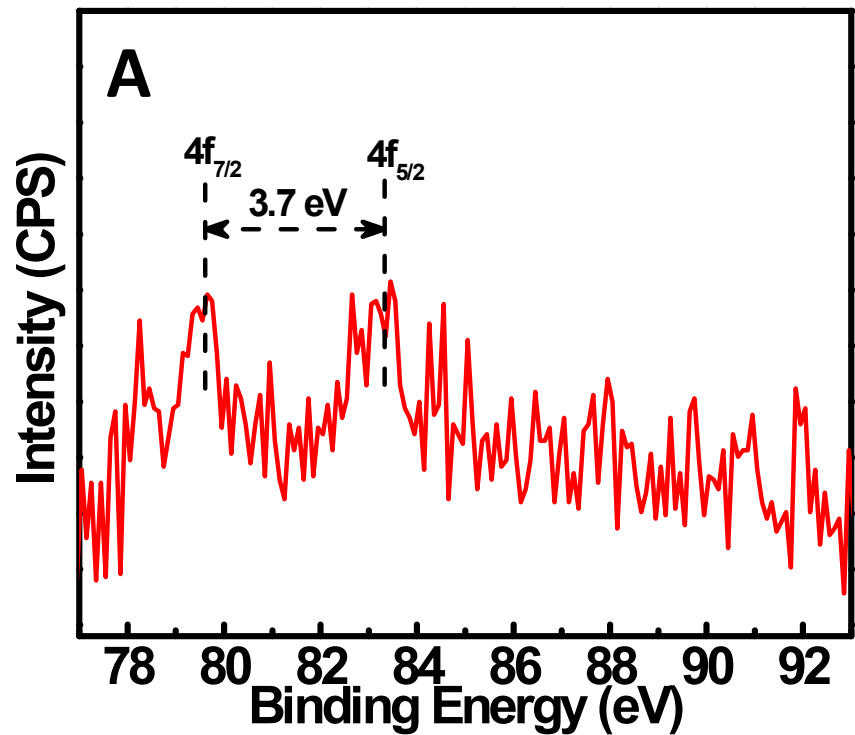


Fig. S5 XPS analysis of Au-TPDT NRs for (A) Au 4f and (B) Hg 4d regions.

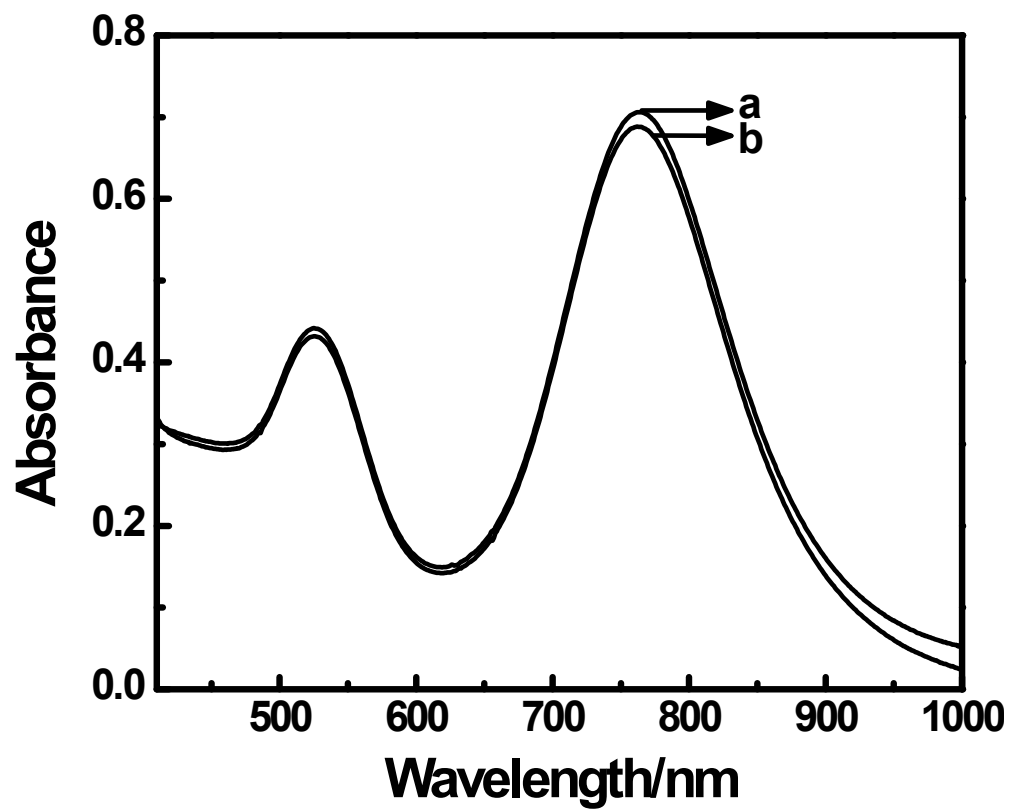


Fig. S6 Absorption spectra of Au NRs (a) and Au NRs after the addition of 20 μM Hg^{2+} ions (b).