

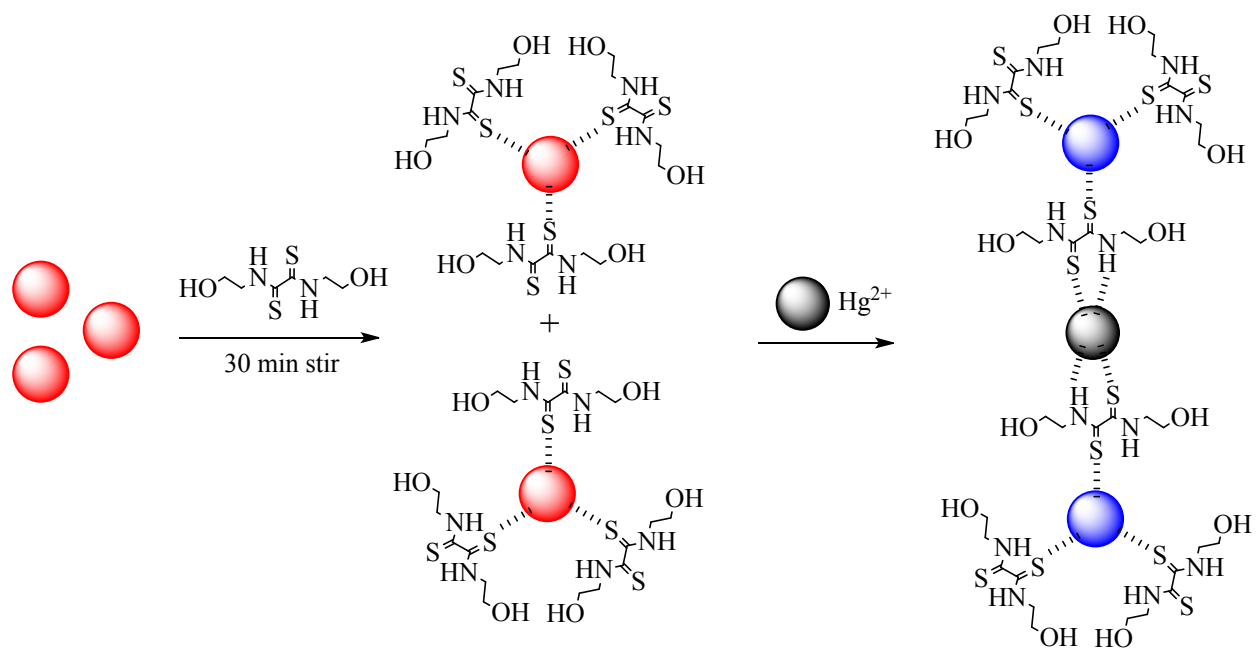
**Electronic Supplementary Information**

**New Journal of Chemistry**

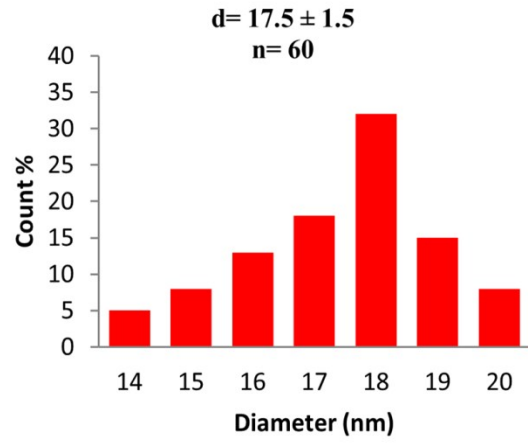
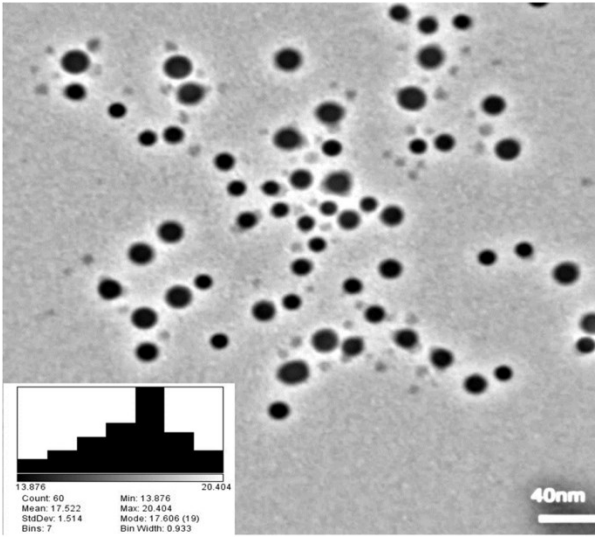
**Microfluidic paper-based analytical device using gold nanoparticles modified with N,N'-bis(2-hydroxyethyl)dithiooxamide for detection of Hg(II) in air, fish and water samples**

Sattar Shariati,\*Gholamreza Khayatian

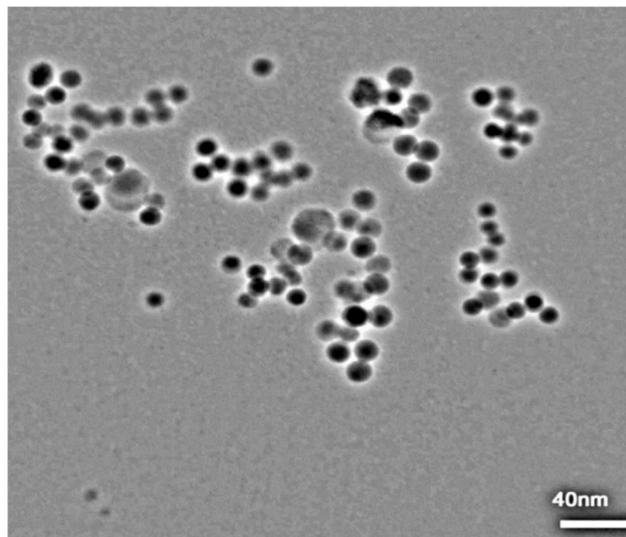
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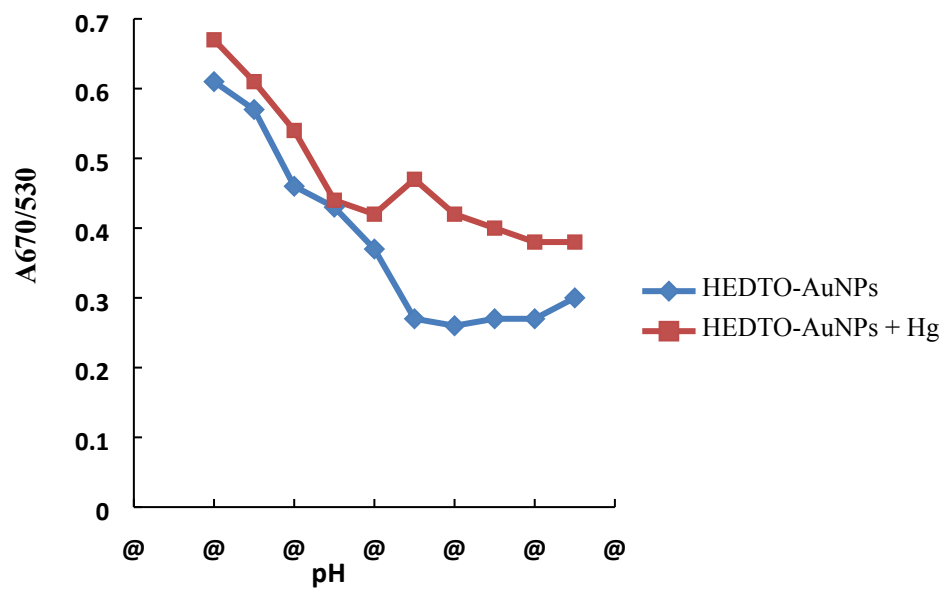
**Fig. S1.** Schematic illustration of possible cross-linking mechanism for aggregation of HEDTO-AuNPs in the presence of  $\text{Hg}^{2+}$



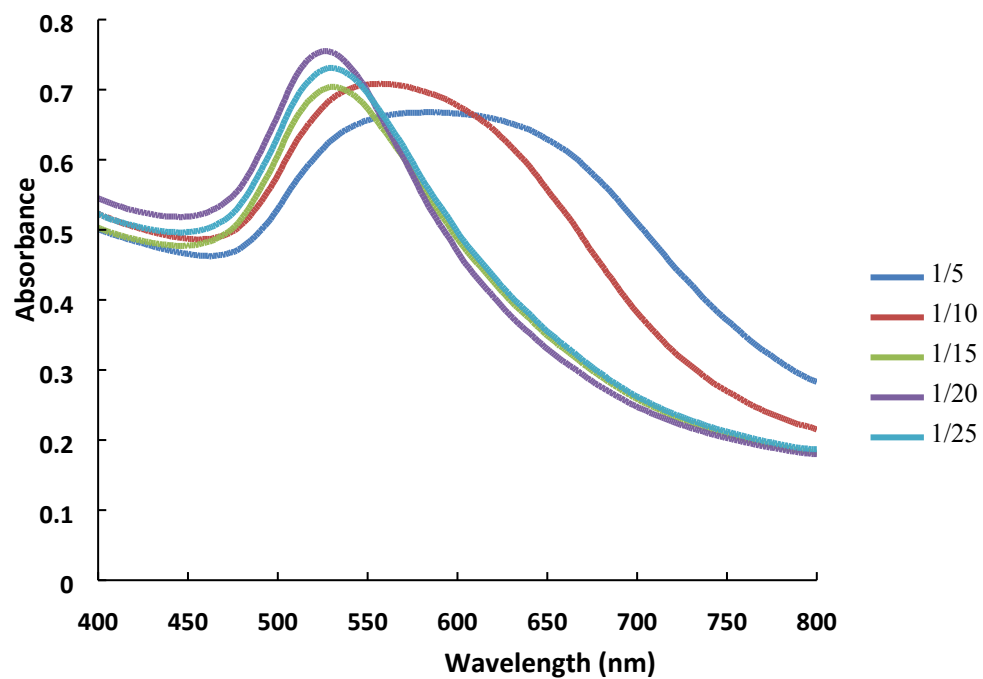
**Fig. S2.** TEM image of HEDTO-AuNPs and the size distribution of HEDTO-AuNPs



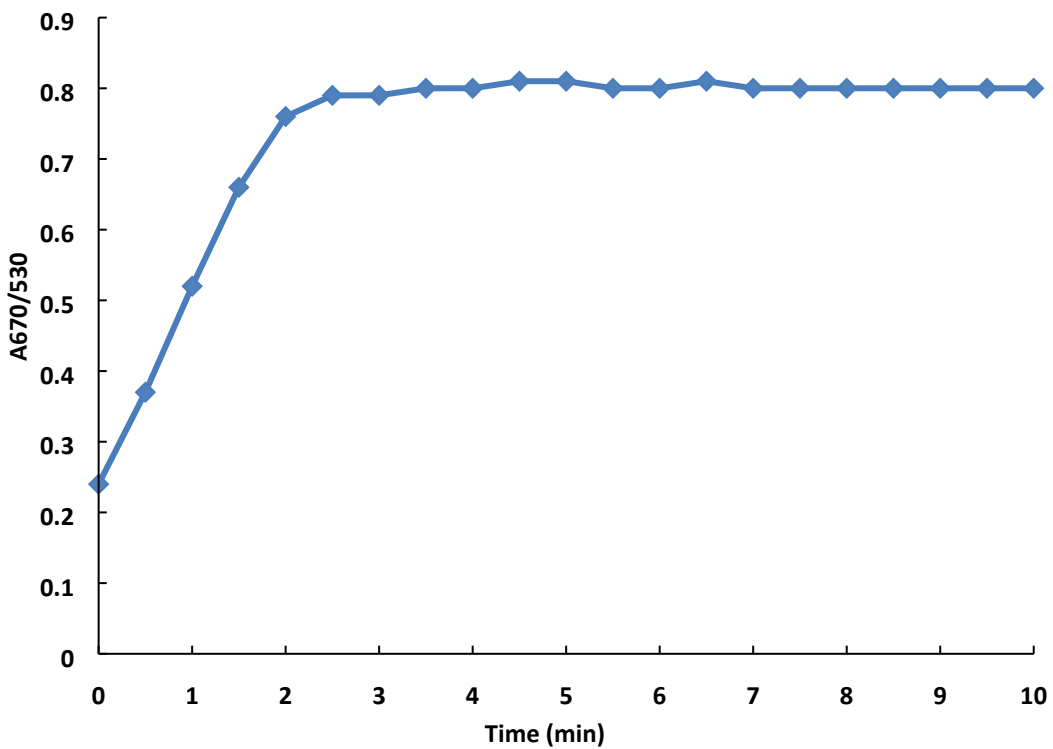
**Fig. S3.** TEM image of HEDTO–AuNPs in the presence of 10.0  $\mu\text{M}$   $\text{Hg}^{2+}$



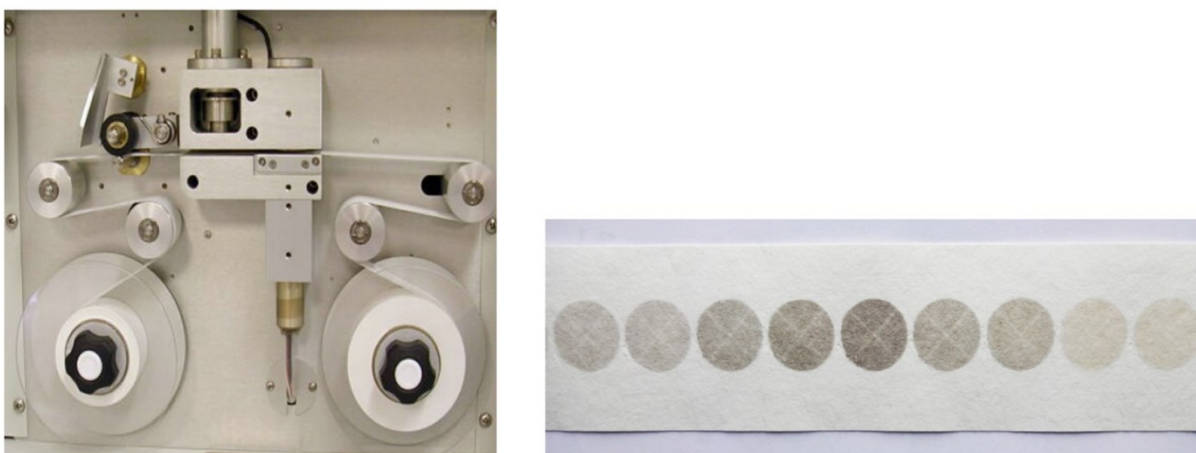
**Fig. S4.** Effect of pH on the HEDTO-AuNPs in the absence and presence of 10.0  $\mu\text{M}$   $\text{Hg}^{2+}$



**Fig. S5.** Effect of concentration ratios of HEDTO-AuNPs



**Fig. S6.** The absorbance intensity ratio of HEDTO-AuNPs solution at different times in the presence of 5.0  $\mu\text{M}$  of  $\text{Hg}^{2+}$



**Fig. S7.** BAM 1020 particulate monitor device and the dust particles collected on paper filters in BAM 1020 particulate monitor