Electronic Supplementary Material (ESI) for Analyst.


# Supporting Information

## Sensitive Fluorescence Detection of Mercury (II) in Aqueous Solution by Fluorescence Quenching Effect of $MoS_2$ with DNA Functionalized Carbon Dots

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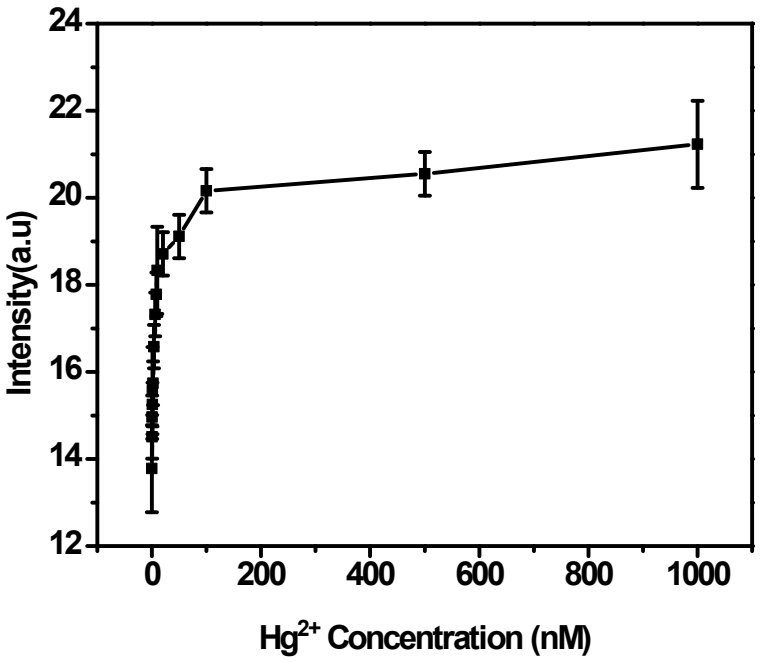


**Fig. S1.** Standard Graph of PL Intensity Versus the Concentration of $Hg^{2+}$ ions using $MoS_2$ Nanosheets/DNA/Carbon Dots Nanoassembly.

**Zeta Potential measurements**

Zeta potentials of $MoS_2$, Carbon dots, DNA/Carbon dots and $MoS_2$ nanosheets/ DNA/Carbon dots were measured using Malvern Instrument NANO ZS Series. About 0.5 mg $mL^{-1}$ was dispersed in 1:1 ratio of DI water and PBS buffer (pH ~ 7.4) and sonicated for 15 mins. The zeta-potential measurements were carried out by pouring 1 mL from the above dispersed solution into a disposable capillary cell. The values are reported as an average of three measurements.

| Samples | Zeta-potential (∫, mV) |
|---|---|
| $MoS_2$ | -22.7±1.4 |
| Carbon dots | -23.2±1.9 |
| DNA/Carbon dots | 13.6±1.5 |
| $MoS_2$ nanosheets/ DNA/Carbon dots | -17.9±2.1 |

**Table S1** Zeta potential measurements

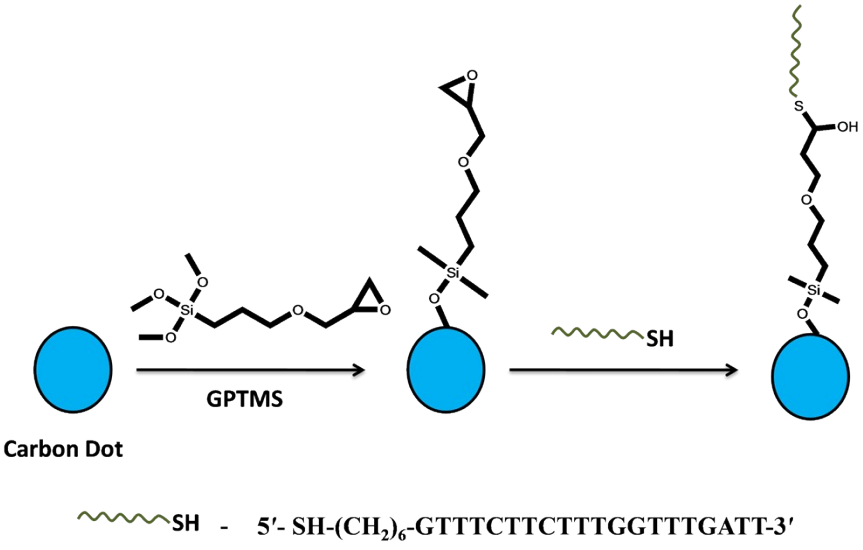


**Fig. S2**. Graphical Representation of Proposed Strategy for DNA Immobilization