Electronic Supplementary Material (ESI) for Dalton Transactions.

Ultrasensitive detection of mercury (II) in aqueous solution via spontaneous precipitation of $CsPbBr_3$ crystallites

Wenjing Jiang,[a,b] Yi Xu,[a,b] Li Wang, [*a,b] Li Chen,[a,b] and Shunbo Li, [*a,b]

a. Key Laboratory of Optoelectronic Technology and Systems, Ministry of Education & Key Disciplines Laboratory of Novel Micro-Nano Devices and System Technology, College of Optoelectronic Engineering, Chongqing University, Chongqing 400044, China. Email: shunbo.li@cqu.edu.cn (S. Li) and wangliyu@cqu.edu.cn (L. Wang)

b. International R & D center of Micro-nano Systems and New Materials Technology, Chongqing University, Chongqing 400044, China.

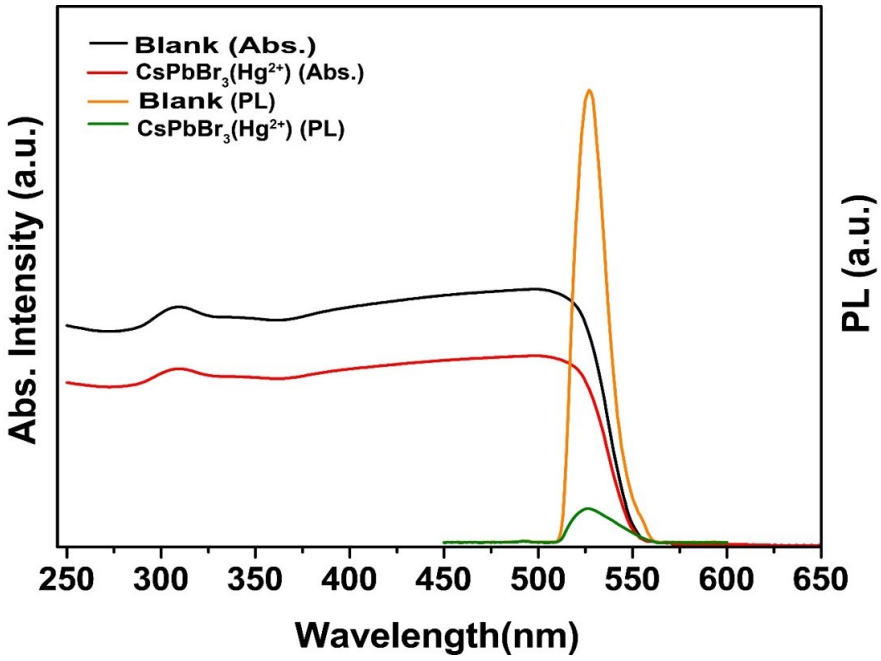

Fig. S1 The UV-vis spectra of the prepared $CsPbBr_3$ crystals with and without presence of mercury ion on the left, and the photoluminescence of $CsPbBr_3$ crystals with and without presence of mercury ion on the right.

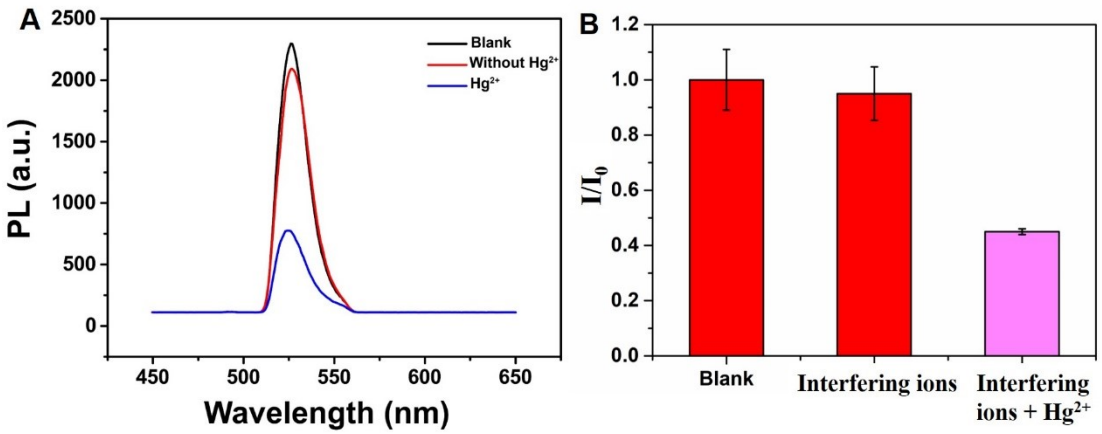

Fig. S2 (A) The photoluminescent spectra of $CsPbBr_3$ precipitated from DI water (black curve), solution with interfering ions (red curve) and mixed solution with interfering ions and 0.1 μM Hg^{2+} (blue curve); (B) The fluorescent intensity changes (I/I_0) of $CsPbBr_3$ precipitated from DI water (blank), solution with interfering ions and mixed solution with interfering ions and 0.1 μM Hg^{2+}. The interfering ions include Ni^{2+}, Mg^{2+}, Ca^{2+}, Co^{2+}, Cu^{2+}, Pb^{2+}, Cd^{2+}, Mn^{2+}, Fe^{2+}, Al^{3+} and K^{+} with concentration of 1 μM for each. I_0 is the peak intensity for blank sample. The emission spectra were measured four times for each condition.