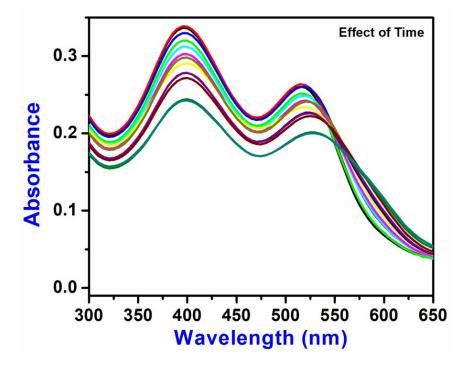
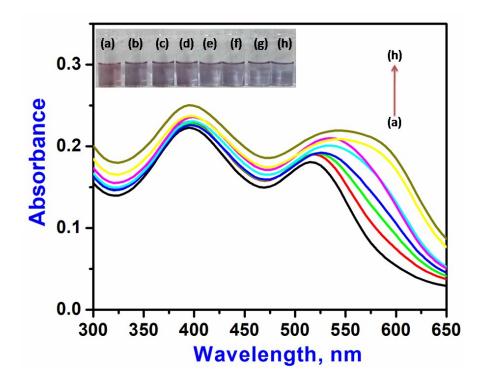
## **SUPPLEMENTRY MATERIALS:**

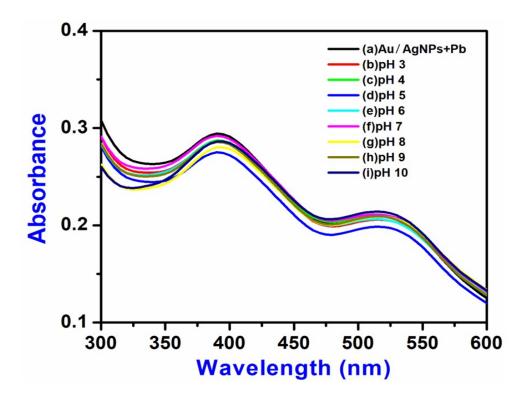
- **Fig. S(1).** UV-Vis spectra to optimize effect of time interval with 10 min of reaction time for selective determination of Pb<sup>2+</sup> ion using Au/Ag BNPs.
- **Fig. S(2).** UV-Vis spectra to optimize effect of concentration of Pb<sup>2+</sup> from 10-100 ng mL<sup>-1</sup> for selective determination of Pb<sup>2+</sup> ion using Au/Ag BNPs.
- **Fig. S(3).** UV-Vis spectra to optimize effect of pH ranging from 3-10, for selective determination of Pb<sup>2+</sup> ion using Au/Ag BNPs.
- **Fig. S(4).** UV-Vis spectra to optimize effect of chemical substances for selective determination of Pb<sup>2+</sup> ion using Au/Ag BNPs.



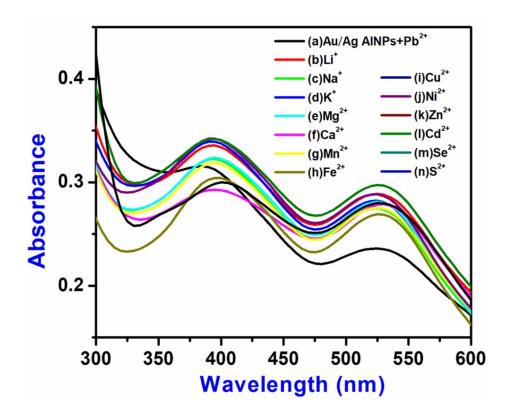
**Fig. S(1).** UV-Vis spectra to optimize effect of time interval with 10 min of reaction time for selective determination of Pb<sup>2+</sup> ion using Au/Ag BNPs.



**Fig. S(2).** UV-Vis spectra to optimize effect of concentration of Pb<sup>2+</sup> from 10-100 ng mL<sup>-1</sup> for selective determination of Pb<sup>2+</sup> ion using Au/Ag BNPs.



**Fig. S(3).** UV-Vis spectra to optimize effect of pH ranging from 3-10, for selective determination of Pb<sup>2+</sup> ion using Au/Ag BNPs.



**Fig. S(4).** UV-Vis spectra to optimize effect of chemical substances for selective determination of Pb<sup>2+</sup> ion using Au/Ag BNPs.