Electronic Supporting Information

Silver nanoparticles as highly efficient and selective optical probe for Sulphide via dendrimer formation in aqueous medium†

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Scheme 1: Synthesis of the Capping Agent **(CA)**:

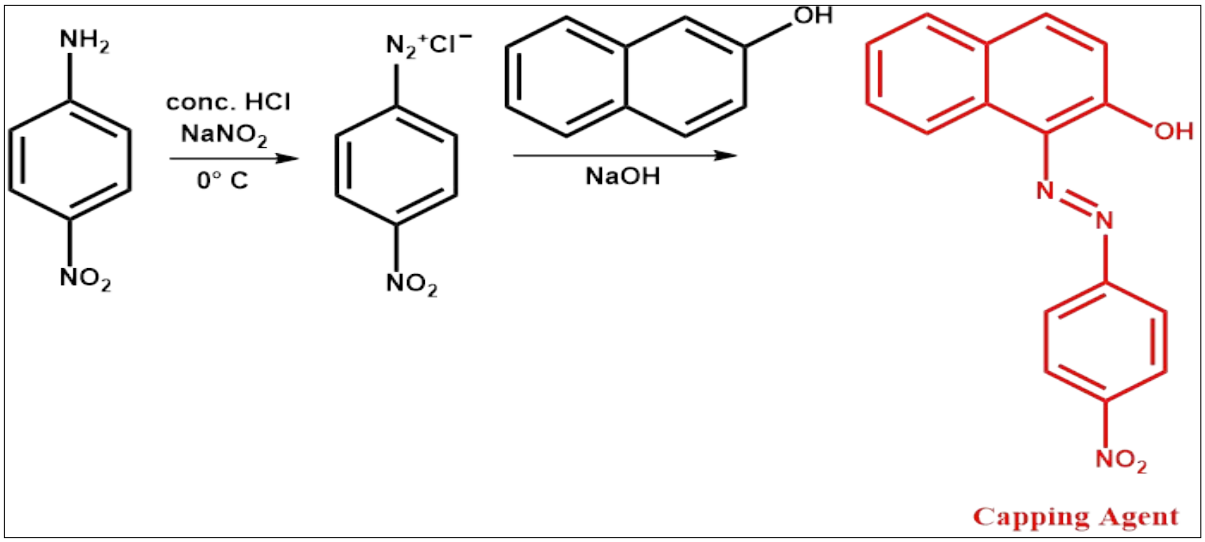

Figure S1: ^{1}H NMR spectrum of **CA** in $CDCl_3$:

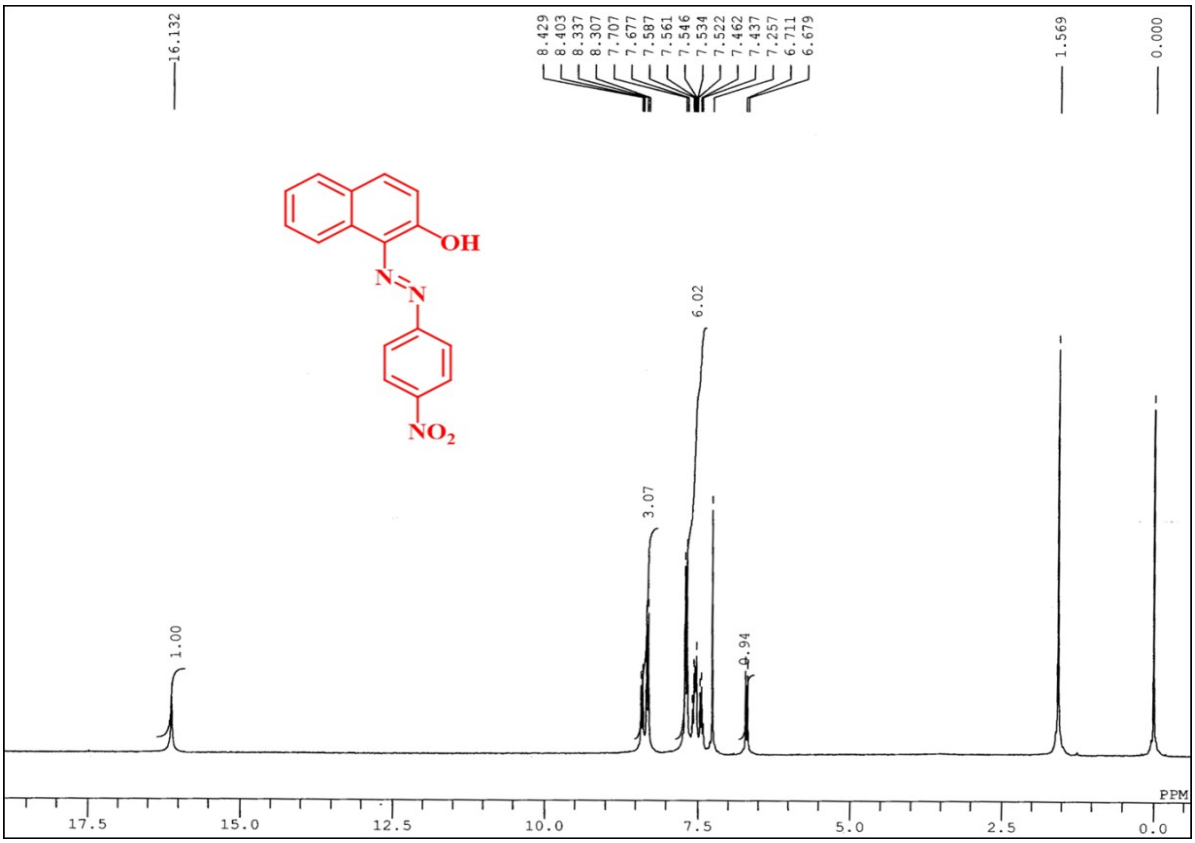

Figure S2: ^{13}C NMR spectrum of **CA** in $CDCl_3$:

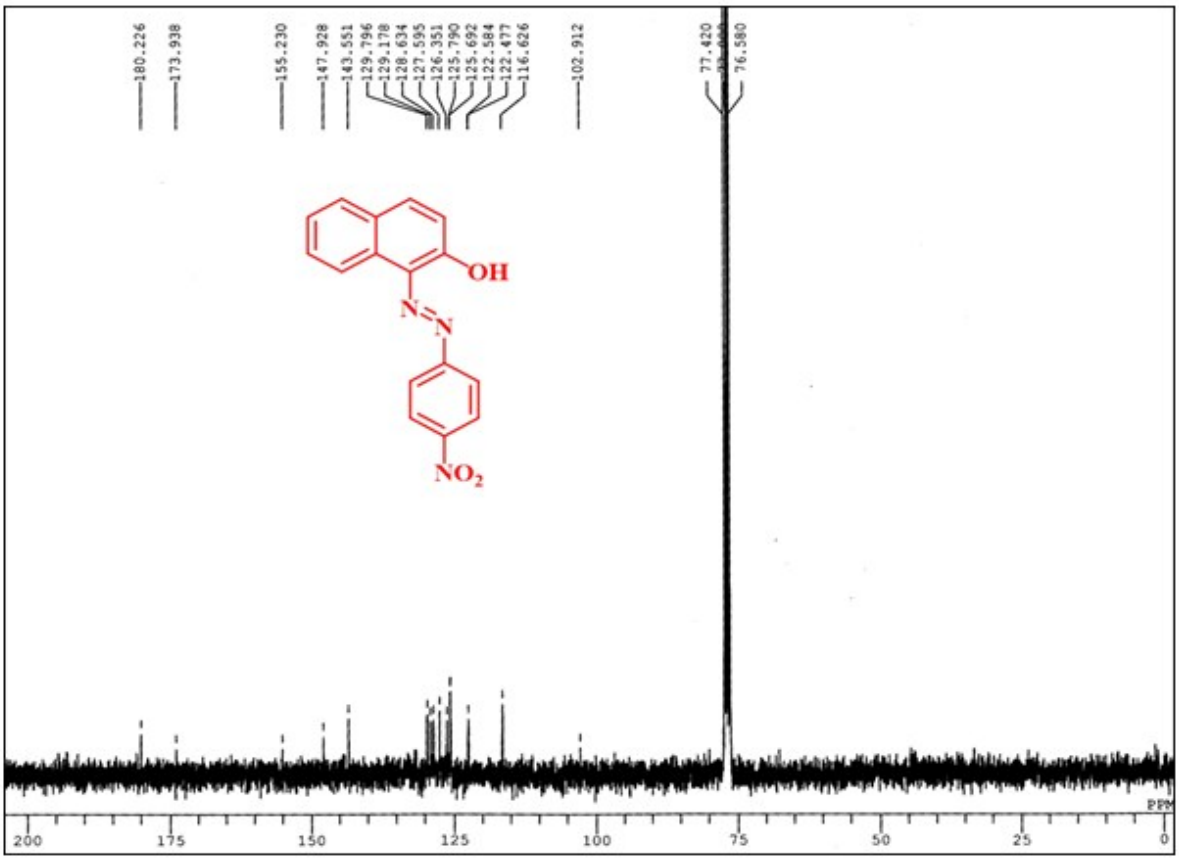

Figure S3: IR spectrum of **CA**:

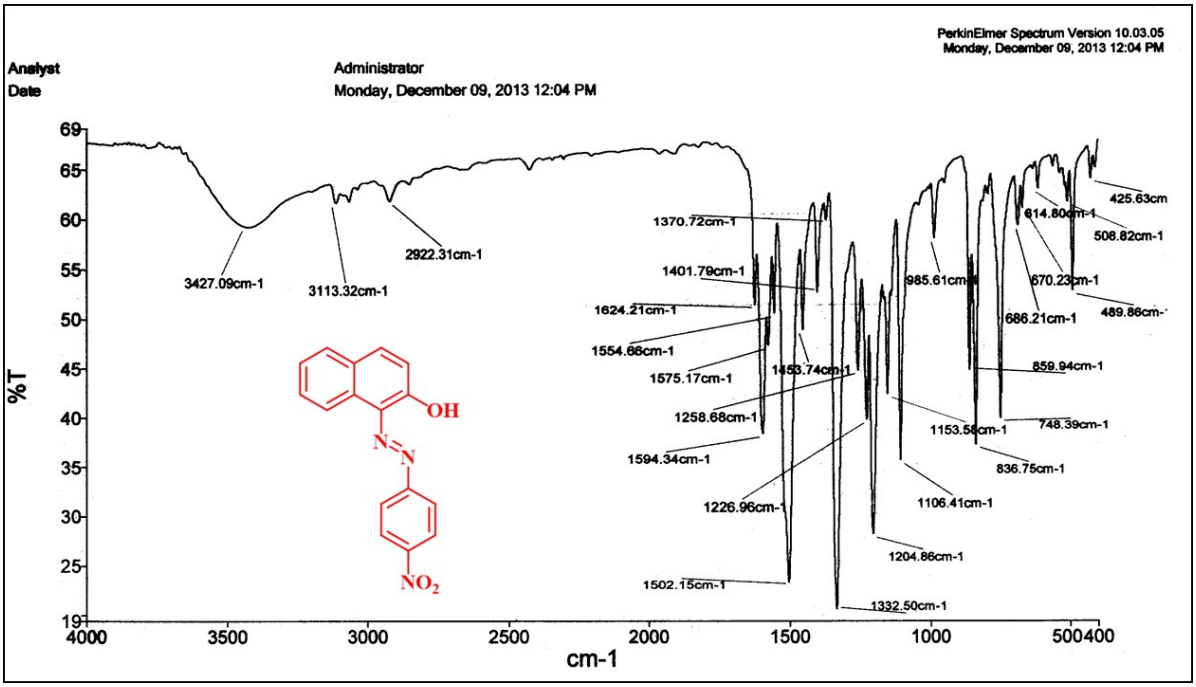

Figure S4: HRMS of **CA**:

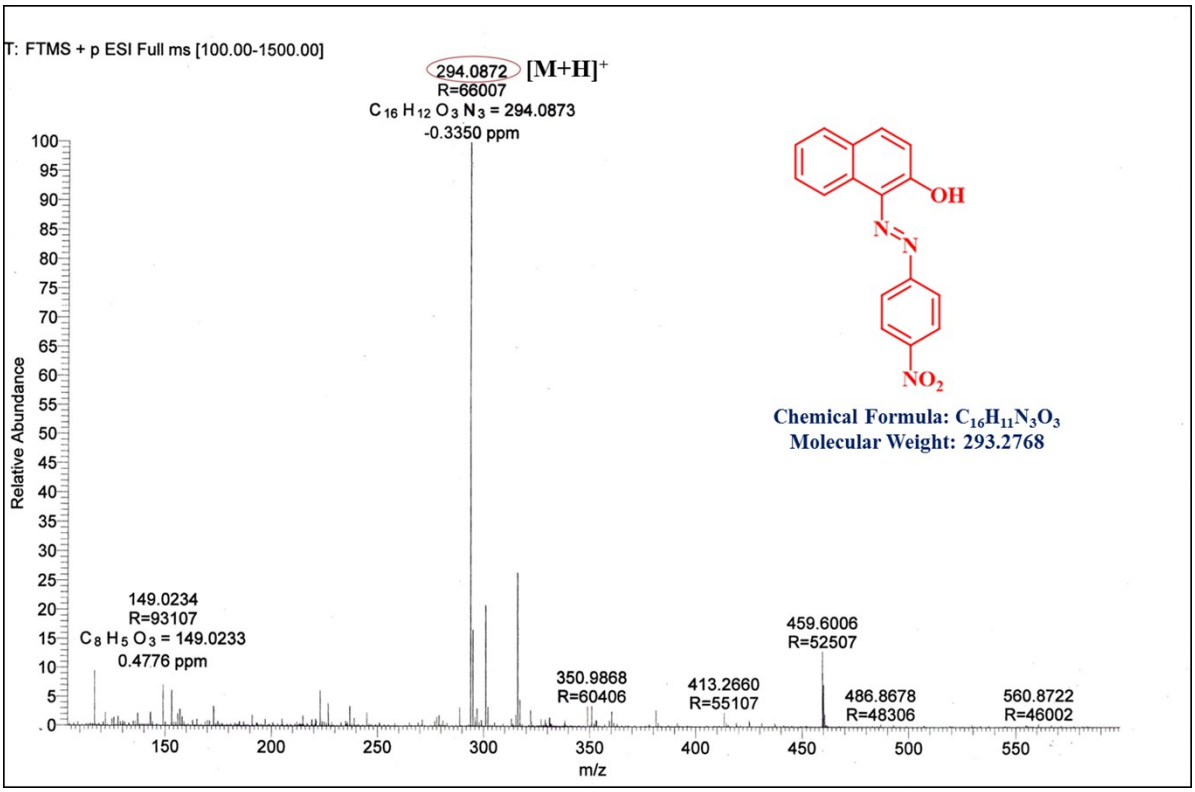

Figure S5: CA Capped AgNPs:

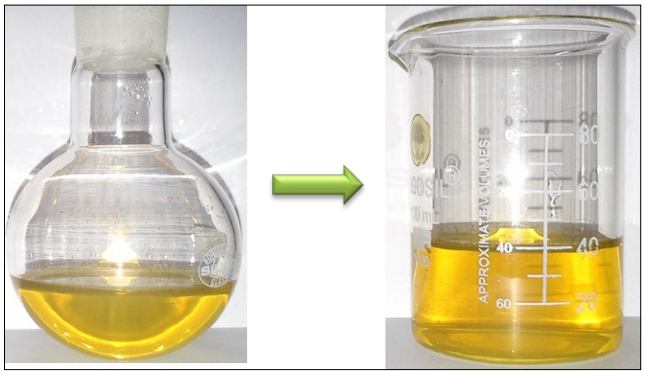

Figure S6: UV-visible spectrum of synthesized AgNPs at different pH (6, 8, 10 and 14):

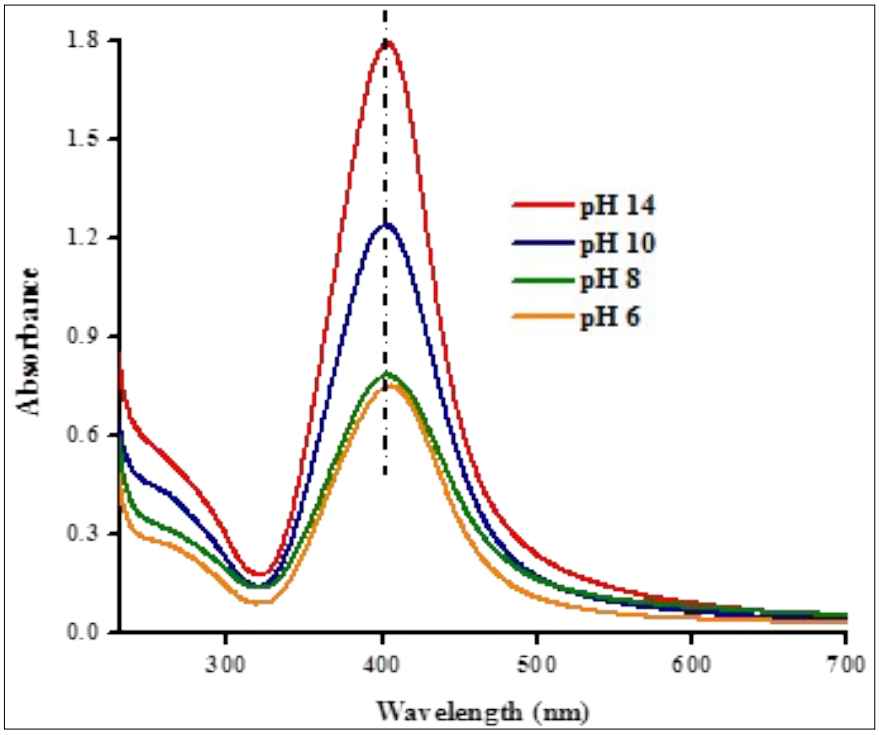

Figure S7: Naked eye response and the corresponding UV-visible spectrum of AgNPs with metals (10 µl of 1.0×10^{-1} M):

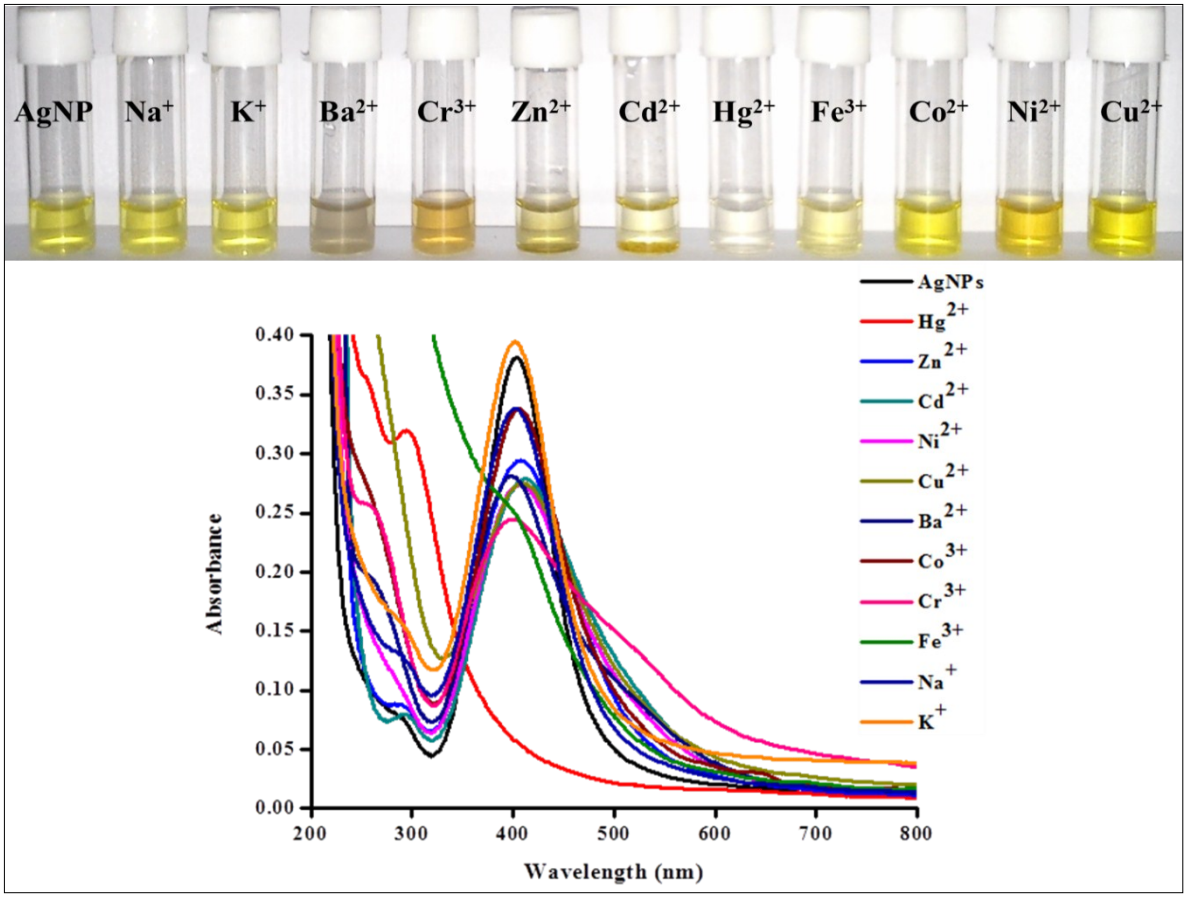

Figure S8: Naked eye response and the corresponding UV-visible spectrum of AgNPs showing interference study in the individual mixture of S^{2-} with other anions:

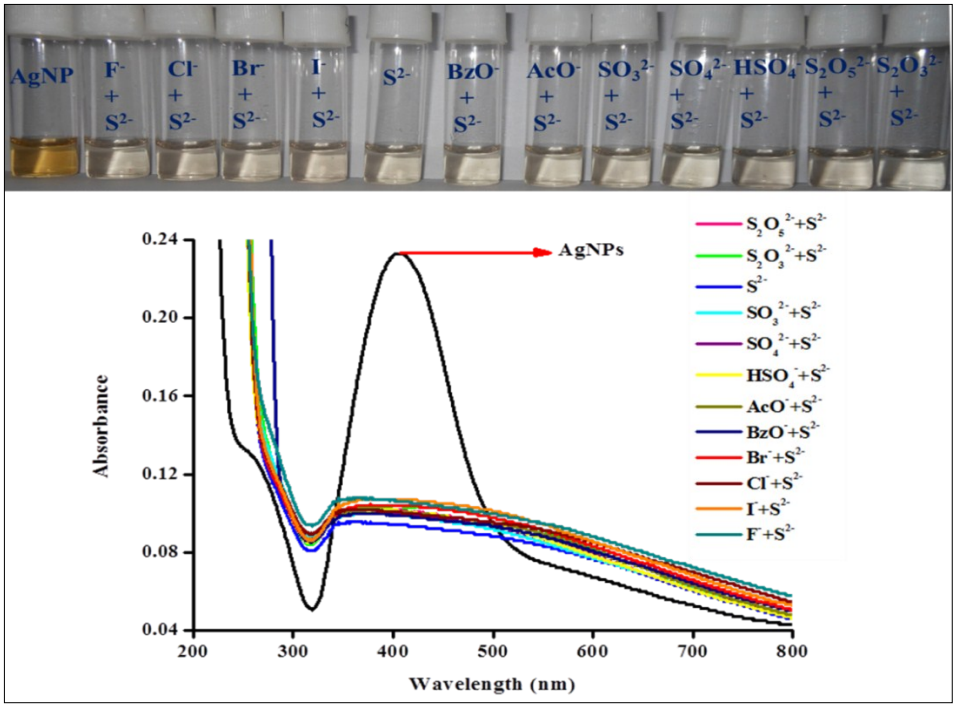

Figure S9: Naked eye response and UV-visible spectrum of AgNPs in the mixture of all anions (10 µl of 1.0×10^{-1} M) and addition of S^{2-} (10 µl of 1.0×10^{-1} M) to the same:

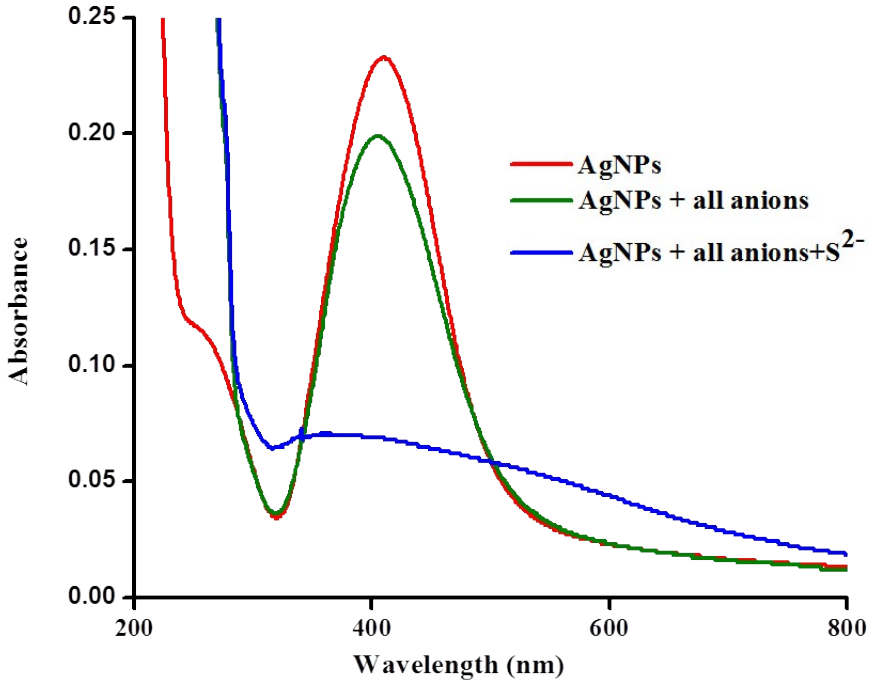

Figure S10: Naked eye response and UV-visible spectrum of AgNPs in the mixture of all cations (10 µl of 1.0×10^{-1} M) and addition of S^{2-} (10 µl of 1.0×10^{-1} M) to the same:

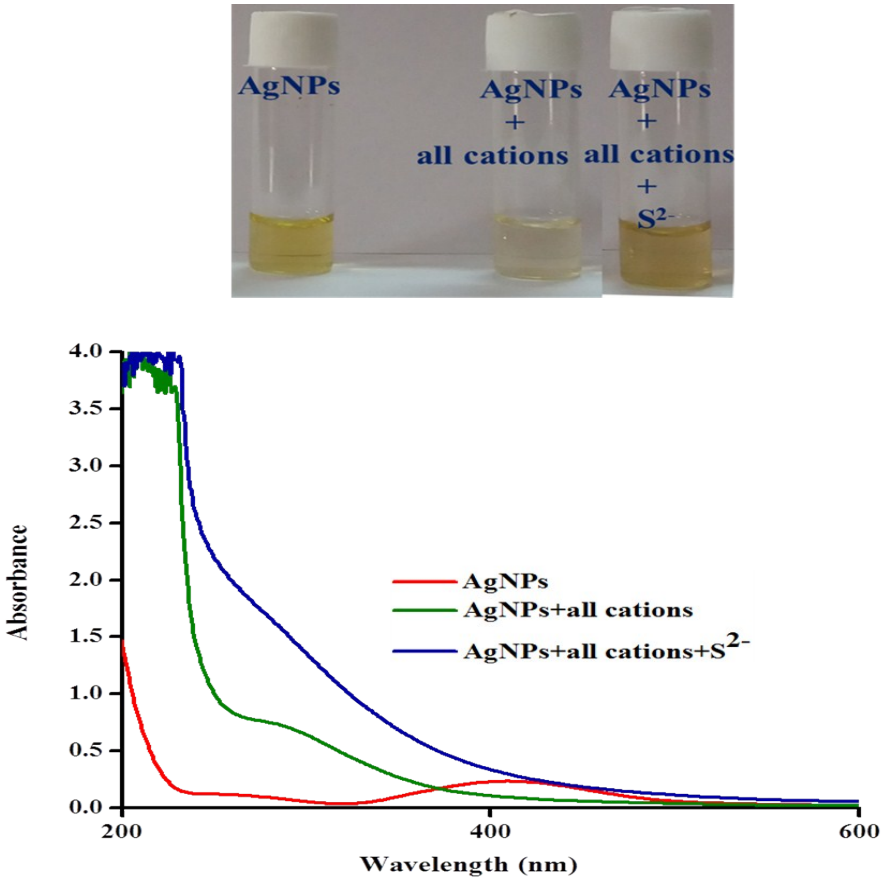

Figure S11a: Stability of AgNPs at different pH (1 to 13):

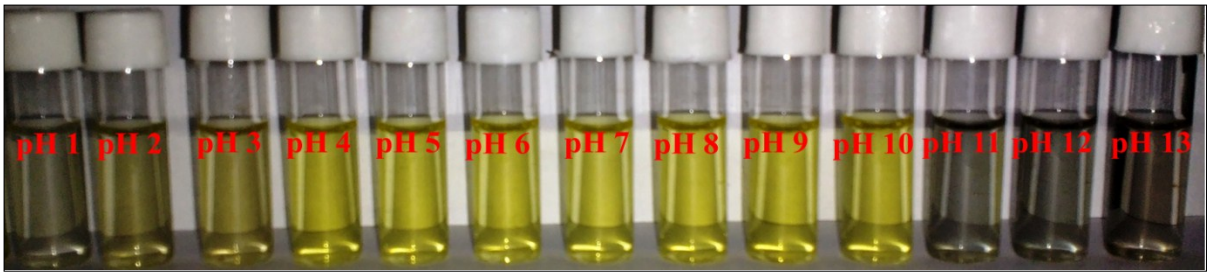

Figure S11b: Colorimetric sensing of S^{2-} through AgNPs at different pH (1 to 13):

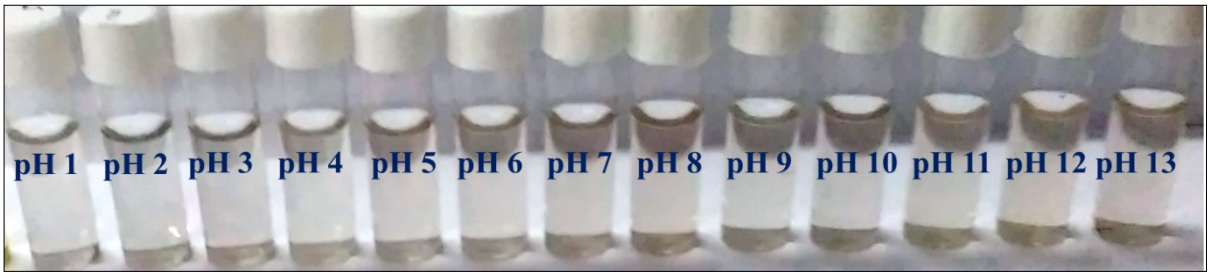

Figure S12: UV-visible spectrum of 5×10^{-5} M **CA** and on the addition of 10 µl of 1.0×10^{-1} M S^{2-} to it:

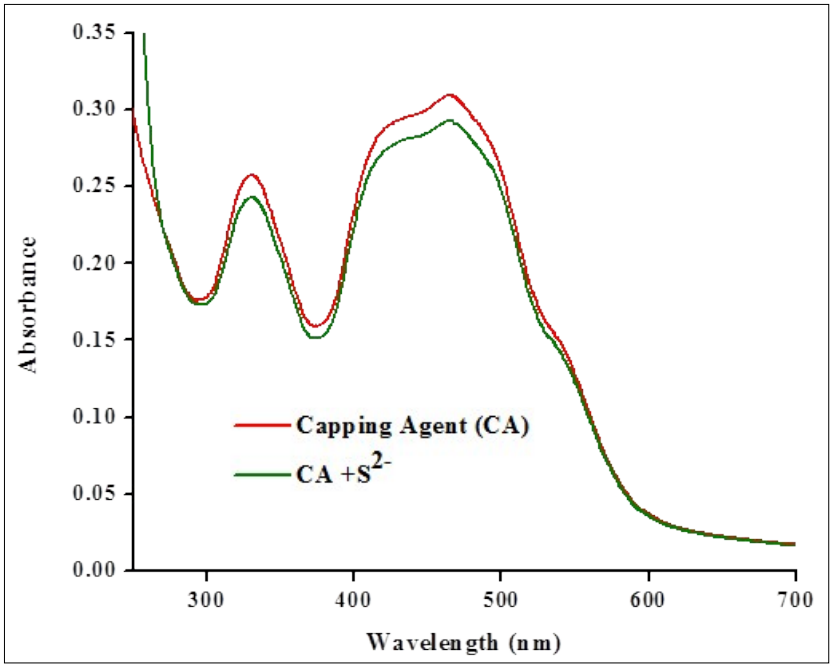

Figure S13a: EDX of spherical shaped **CA** capped AgNPs:

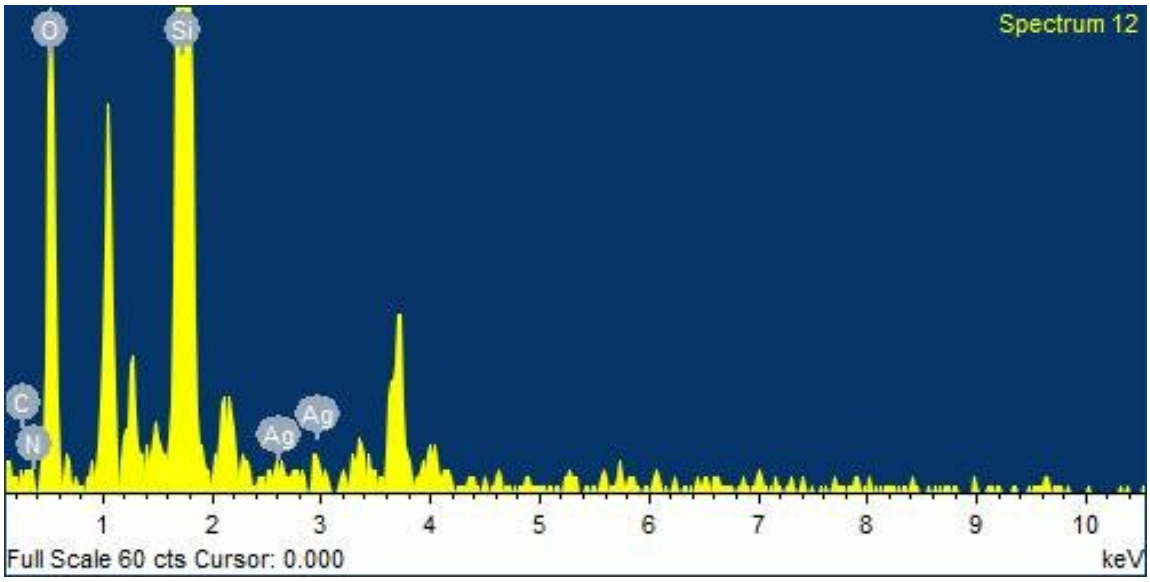

Figure S13b: EDX of S^{2-} induced dendritic architecture of AgNPs.