

Fig. S1 (A) Photographs UV-vis spectrum of RH and RH-AgNPs. Photographs and UV-vis spectra of RH-AgNPs using (B) different AgNO₃ concentrations and (C) different volume of RH. Photographs and UV-vis spectra of RH-AgNPs prepared under different (D) reaction time (E) pH values.

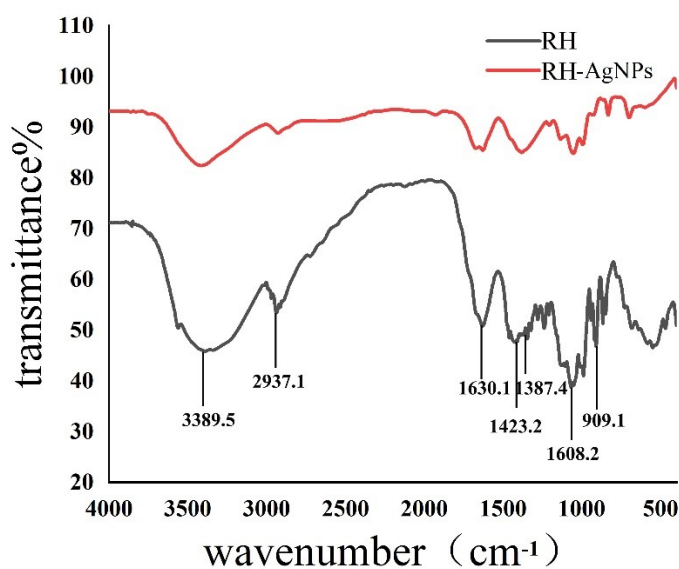


Fig.S2 The FT-IR spectra of RH and RH-AgNPs.

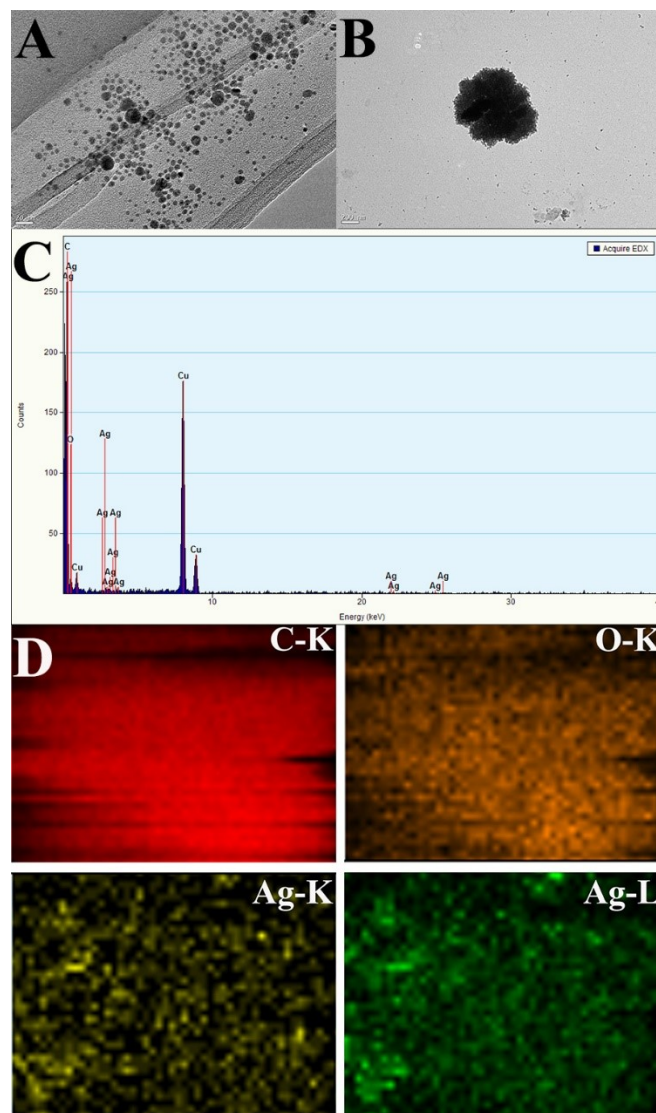


Fig.S3 TEM image of RH-AgNPs (A) in the absence of Pb^{2+} , (B) in the presence of Pb^{2+} . (C) EDS images of RH-AgNPs.
(D) Mapping image of RH-AgNPs.

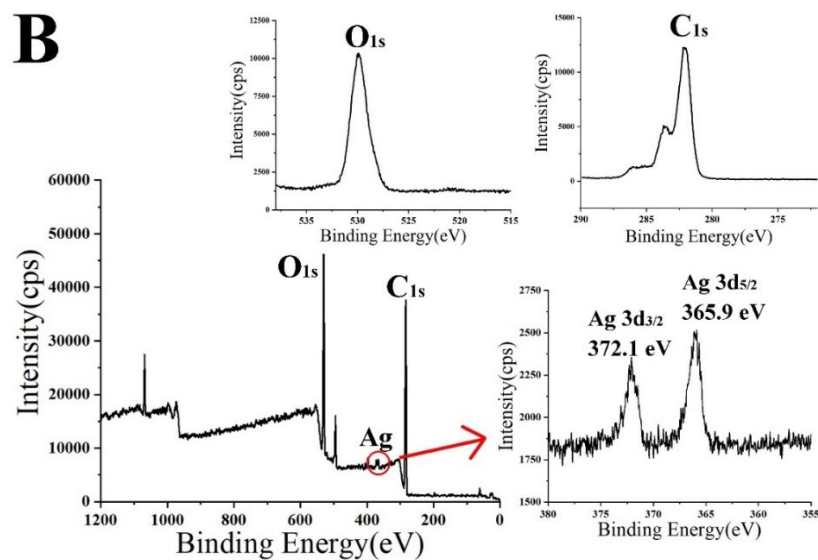
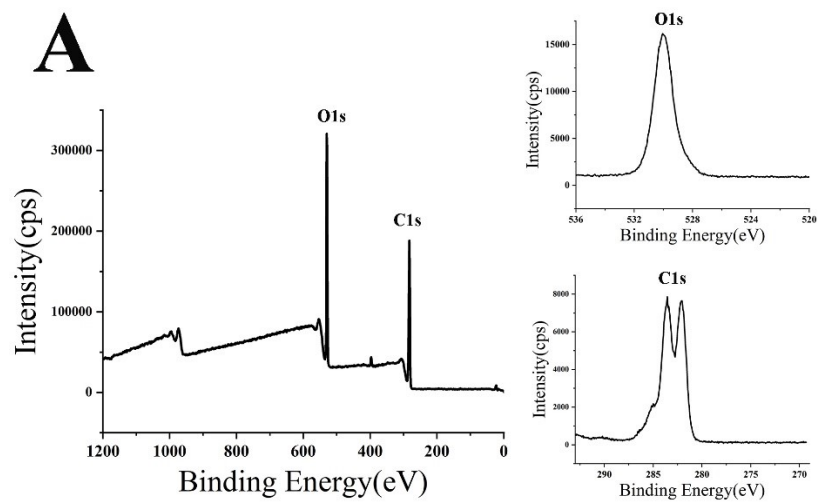


Fig.S4 The XPS analysis of (A) RH and (B) RH-AgNPs.

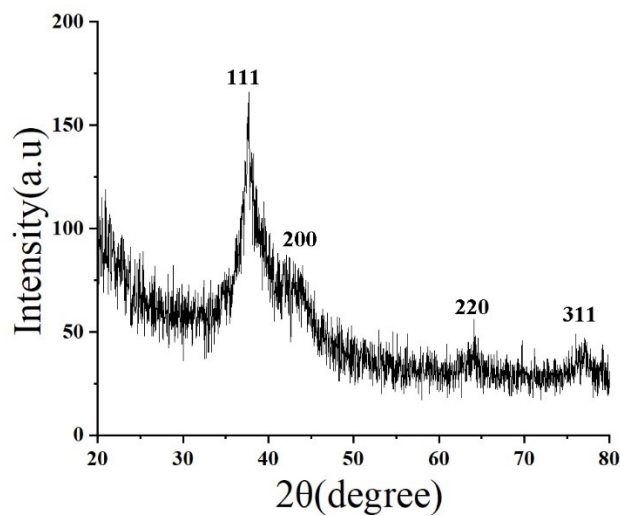


Fig.S5 X-ray diffraction patterns of RH-AgNPs.