Electronic Supplementary Material (ESI) for Materials Chemistry Frontiers.

Supporting Information

Highly dispersed silver nanoparticles confined in a nitrogen-containing covalent organic framework for 4-Nitrophenol reduction

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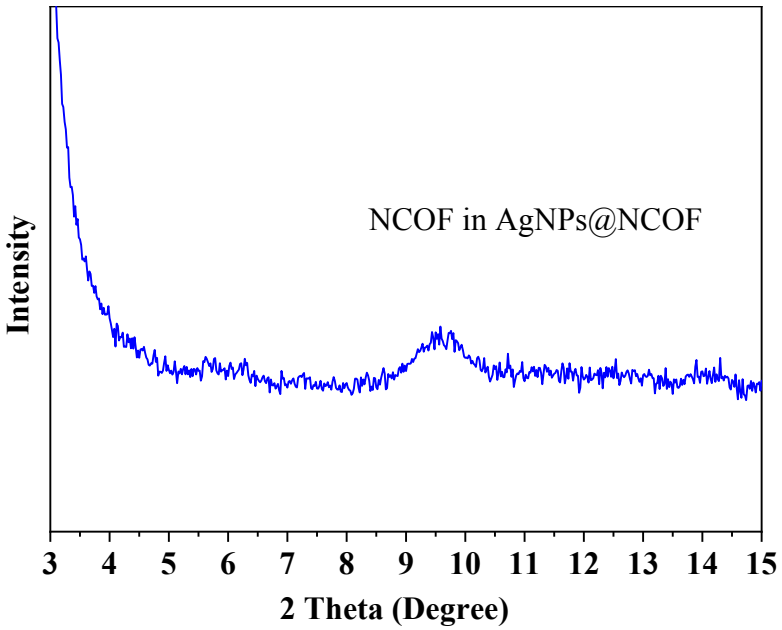

Figure S1. PXRD pattern of the NCOF in AgNPs@NCOF.

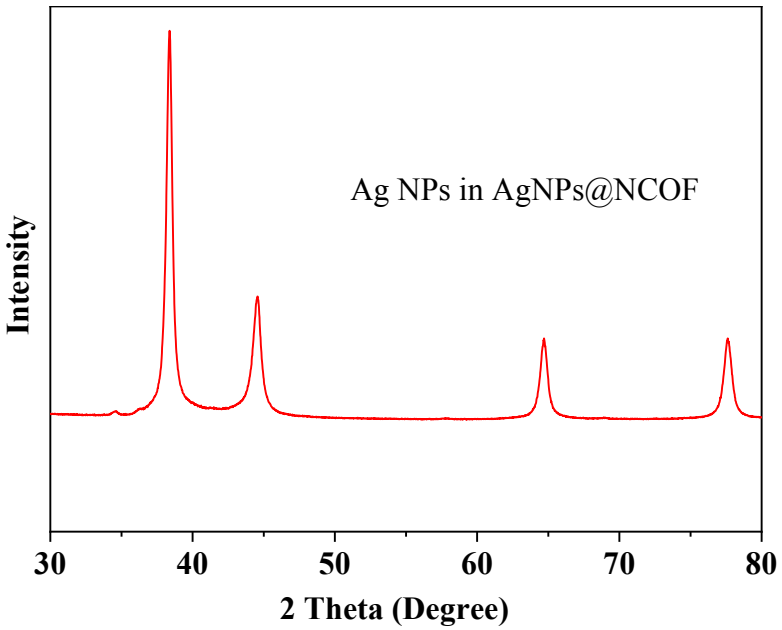

Figure S2. PXRD pattern of the Ag NPs in AgNPs@NCOF.

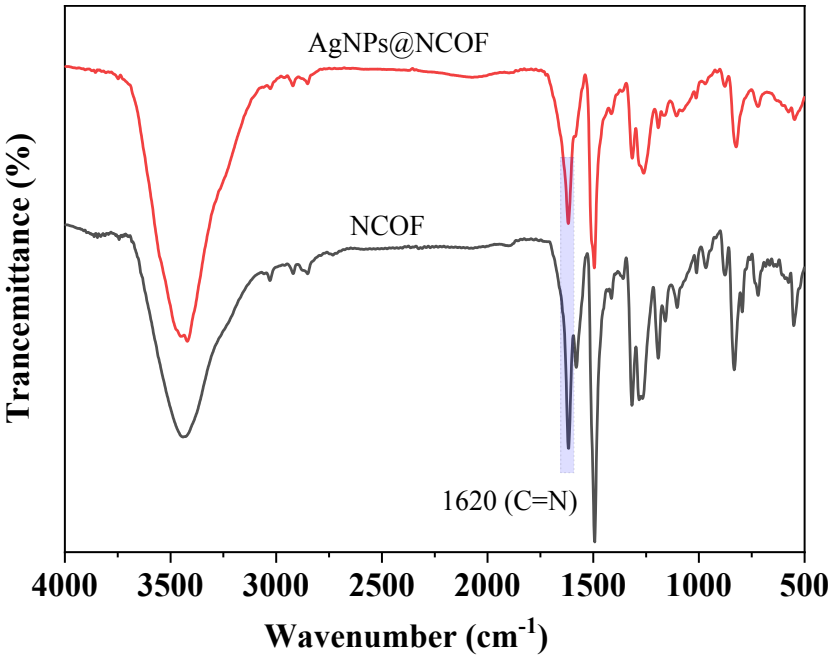

Figure S3. FT-IR spectra of the NCOF and the AgNPs@NCOF.

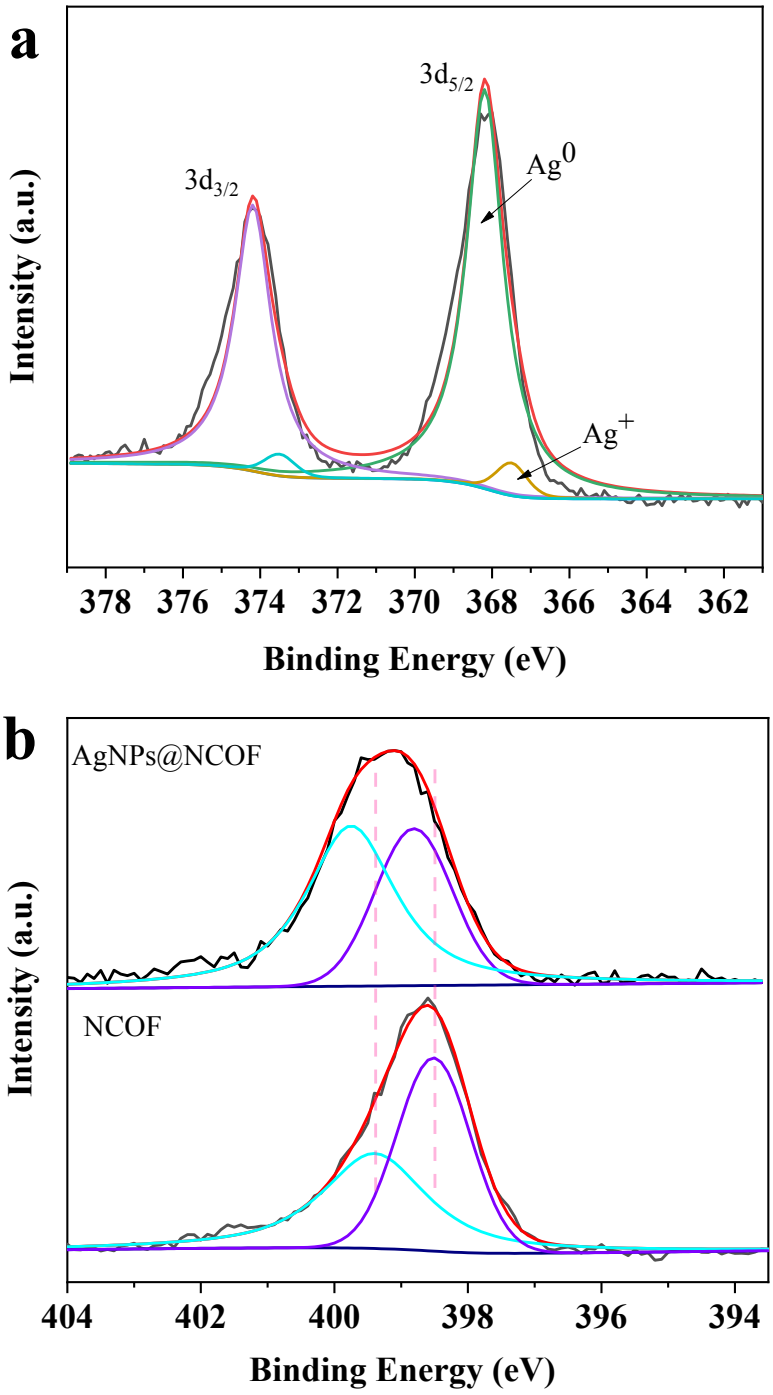

Figure S4. (a) Ag 3d region in the XPS spectra of AgNPs@NCOF. (b) N 1s region in the XPS spectra of AgNPs@NCOF and NCOF.

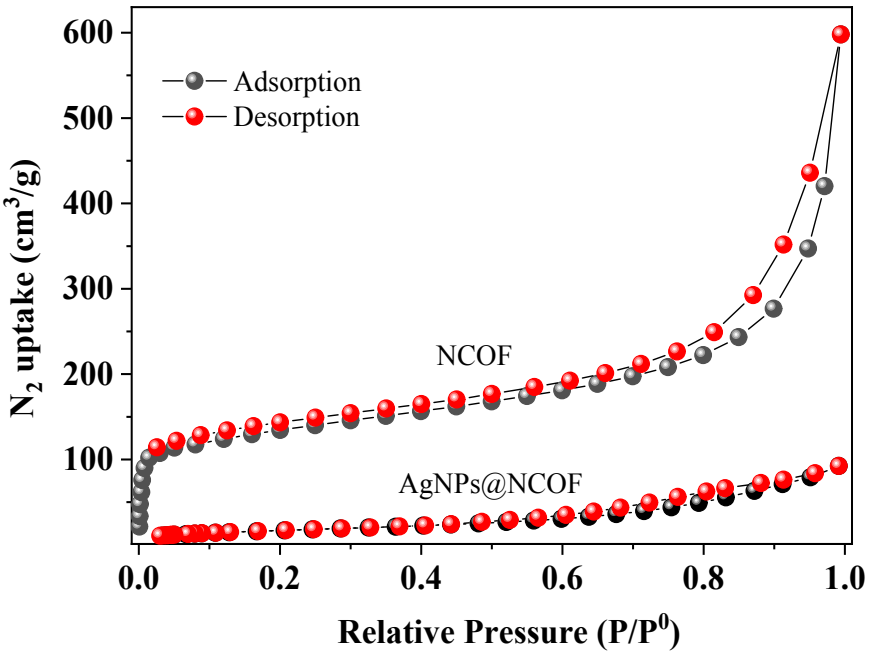

Figure S5. N_2 adsorption-desorption isotherms of AgNPs@NCOF and NCOF.

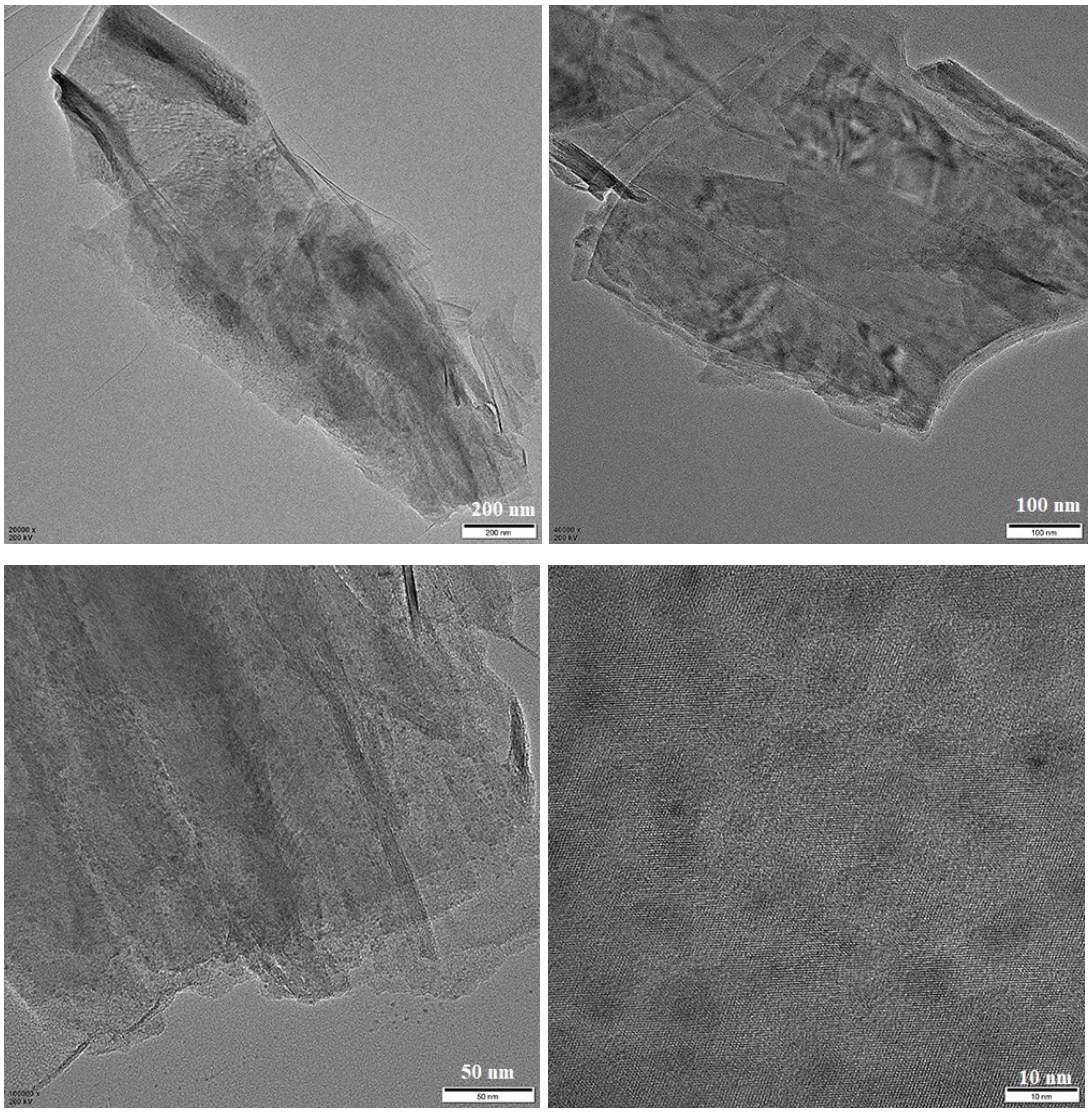

Figure S6. Different magnification TEM image of AgNPs@NCOF.

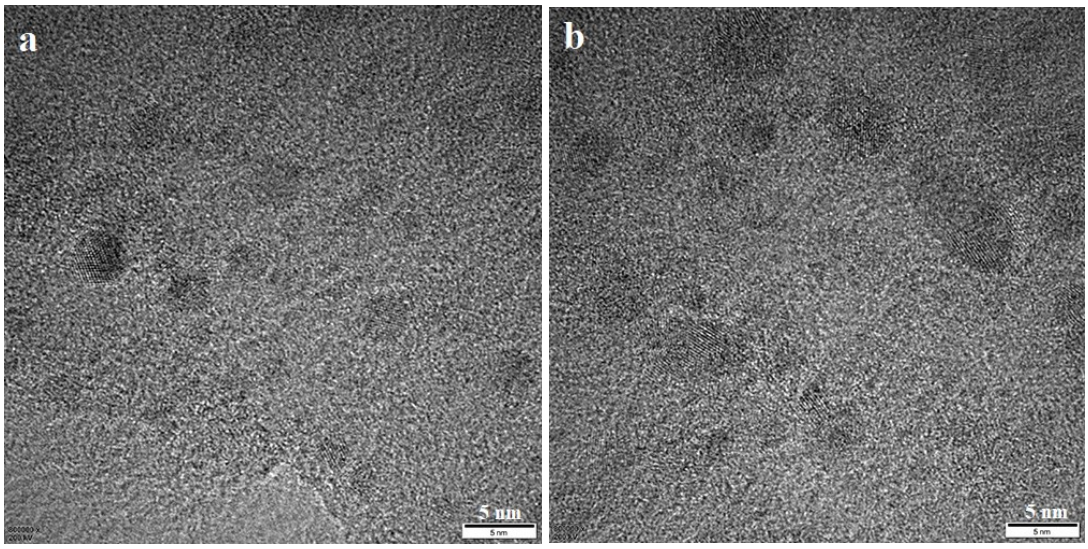

Figure S7. TEM images of AgNPs@NCOF synthesized under different conditions: (a) Ag NPs synthesized using $NaBH_4$ methanol solution; (b) Ag NPs synthesized using $NaBH_4$ aqueous solution.

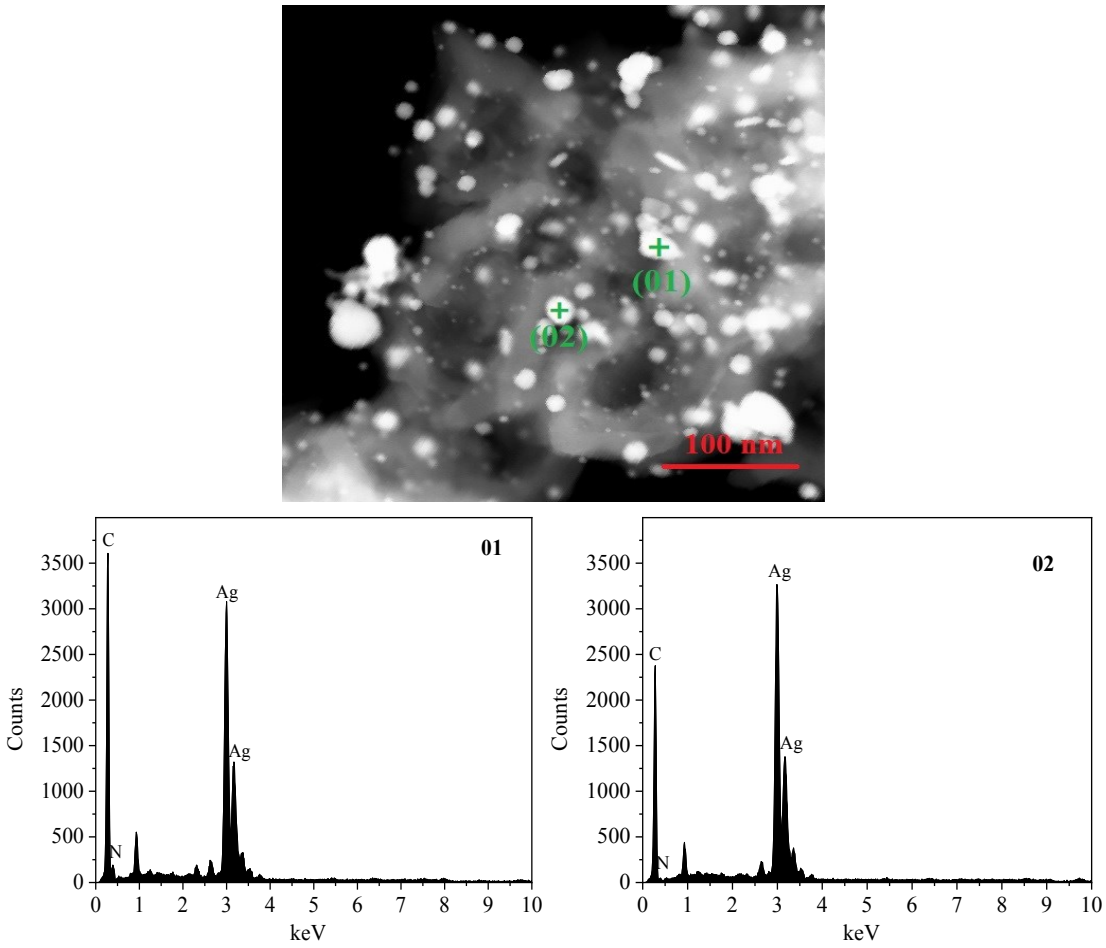

Figure S8. Point mapping of AgNPs@NCOF in two different points to confirm the formation of Ag NPs.

Figure S9. The images of the color change observed for the conversion of 4-nitrophenol to 4-aminophenol after the addition of AgNPs@NCOF catalyst after 3 minutes.

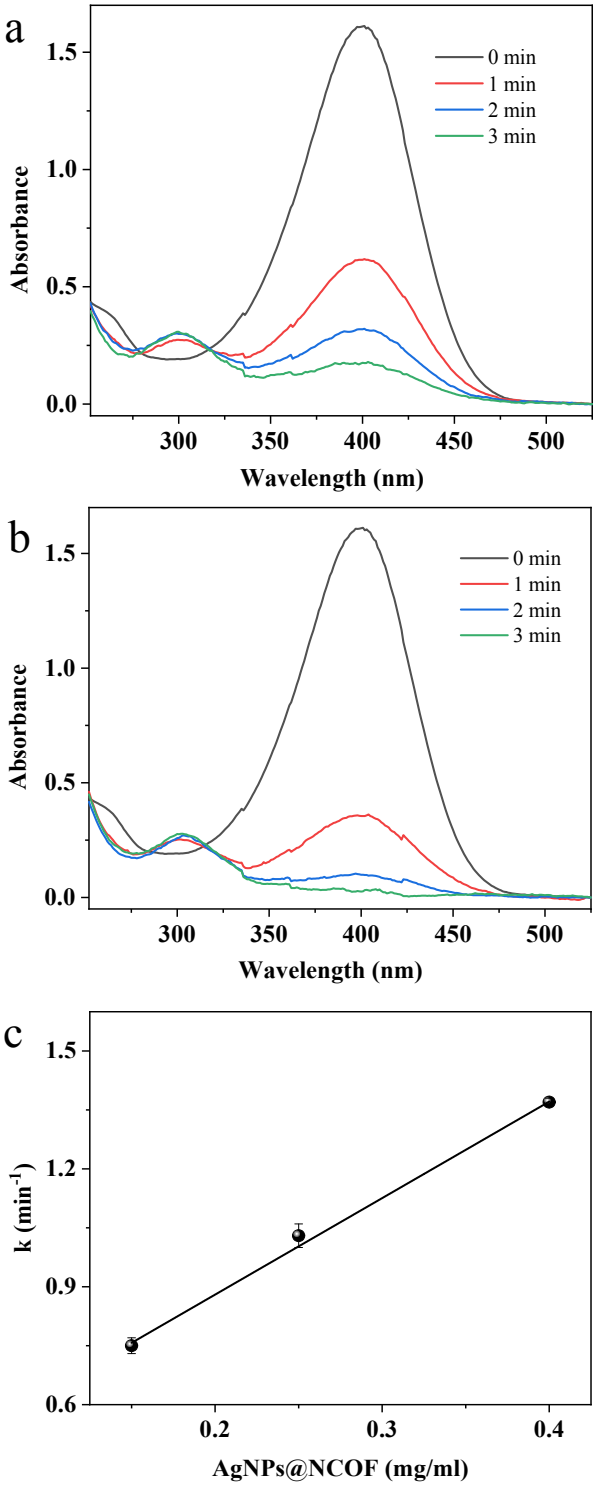

Figure S10. Time-dependent UV−vis spectra of the reduction of 4-NPh catalyzed by AgNPs@NCOF. (a) 0.15 mg/ml and (b) 0.4 mg/ml. (c) The effect of concentration of AgNPs@NCOF on the catalytic performance.

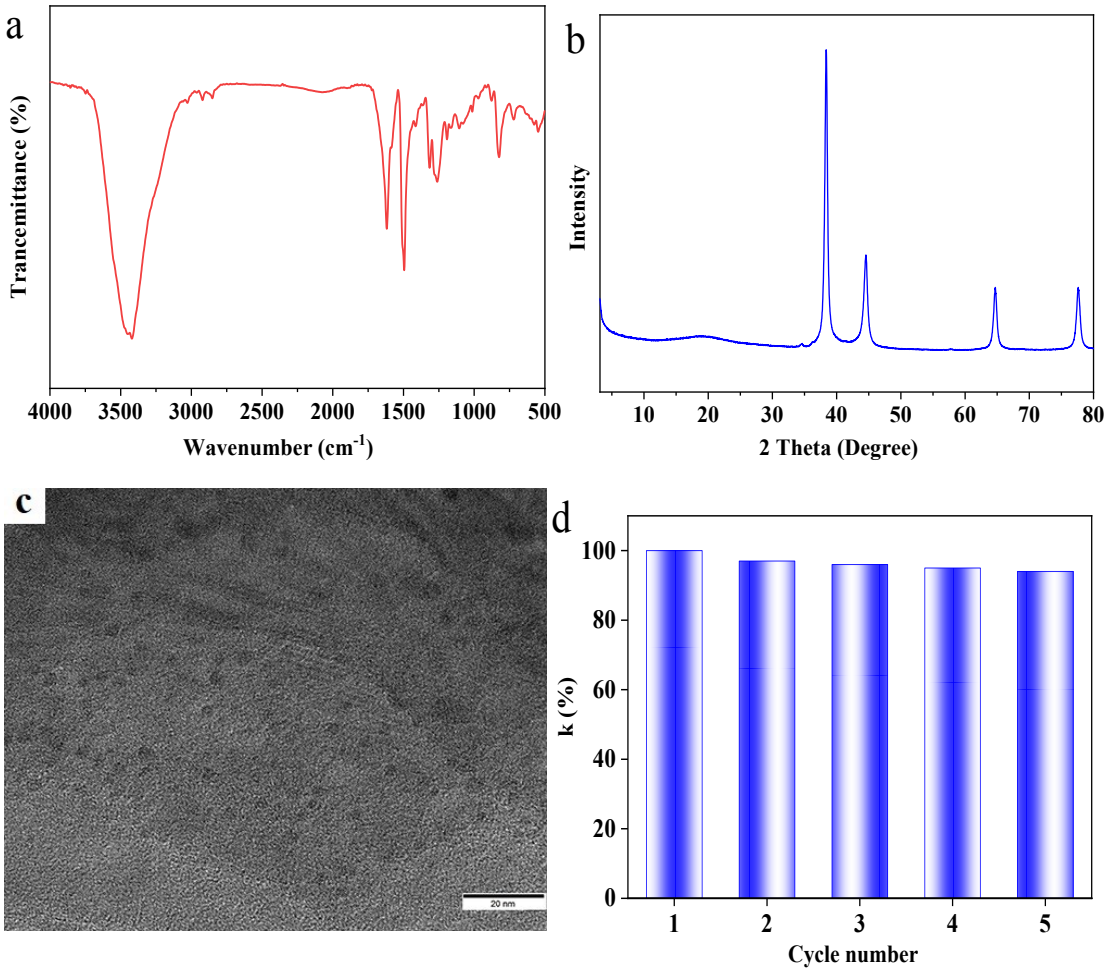

Figure S11. FT-IR spectrum (a), PXRD profile (b) and TEM image of AgNPs@NCOF after five cycles. (d) Recyclability of AgNPs@NCOF in the reduction of 4-NPh.