

Supplementary Information

A highly efficient noble metal free copper nickel oxysulfide nanoparticles for catalytic reductions of 4-nitrophenol, Methyl blue, and Rhodamine-B organic pollutants.

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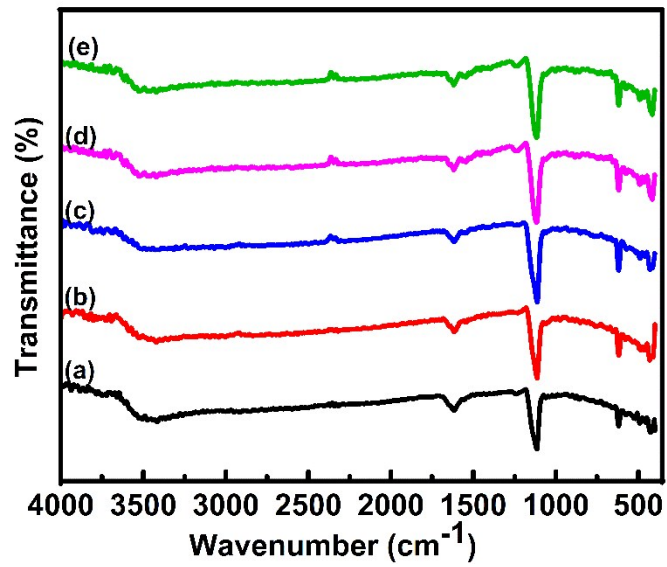


Fig. S1 FTIR spectra of (a) CuOS, (b) CuNiOS-0.2, (c) CuNiOS-0.4, (d) CuNiOS-0.6, and (e) CuNiOS-0.8.

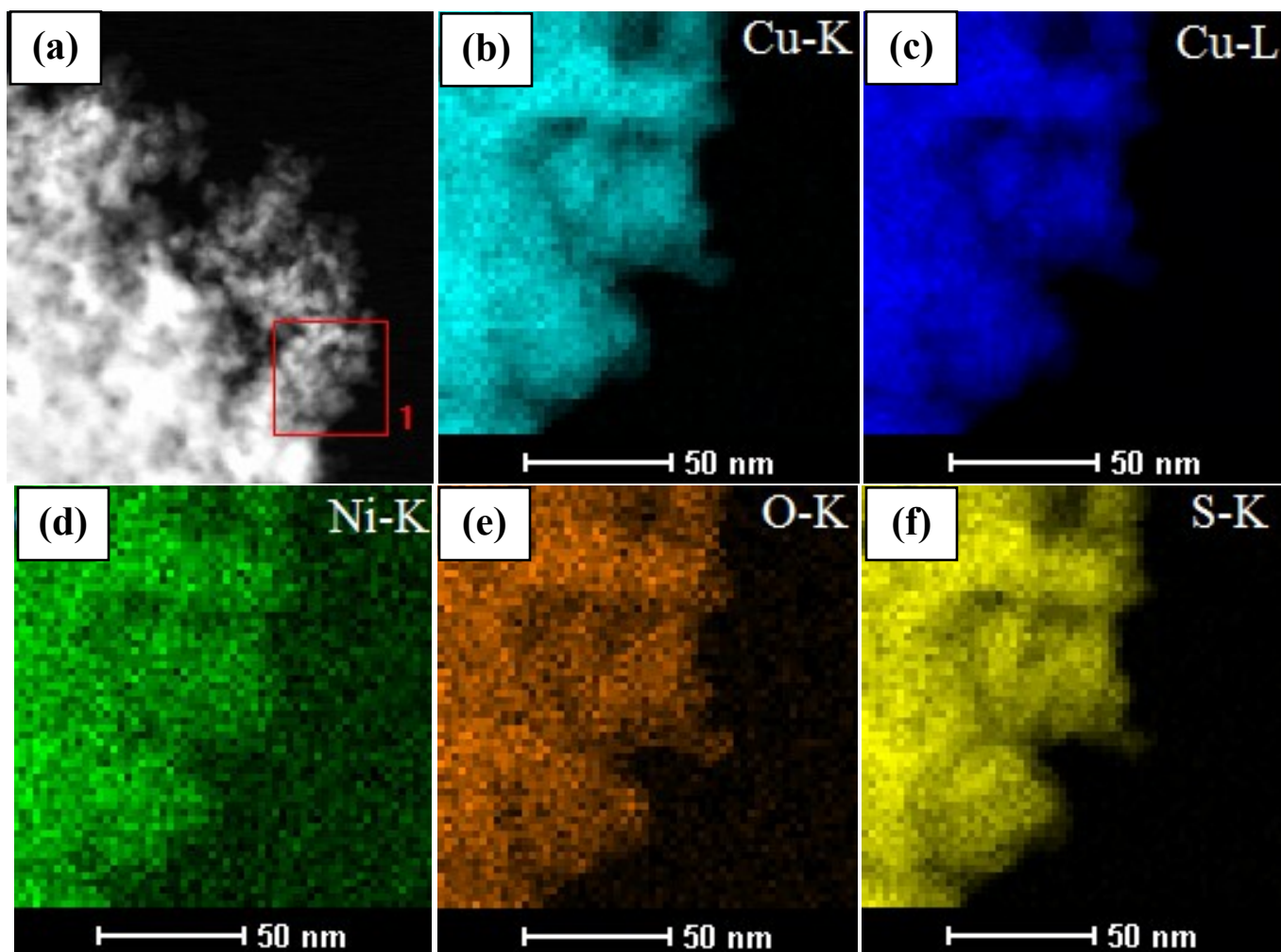


Fig.S2 (a) HAADF STEM image and elemental mapping of (b) Cu-K, (c) Cu-L, (d) Ni-K, (e) O-K, and (f) S-K.

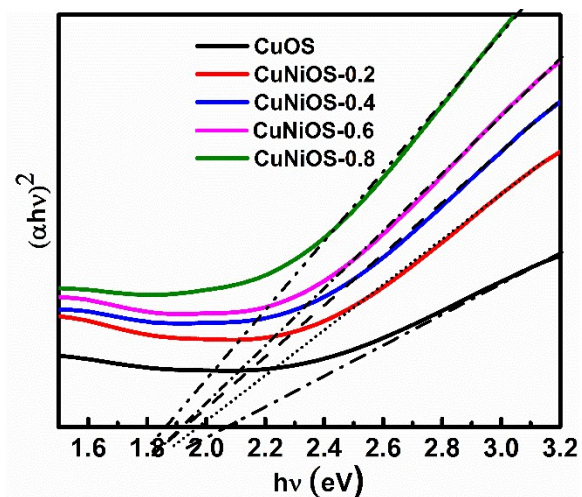


Fig. S3 Plot of $(\alpha hv)^2$ versus $h\nu$ for determining the bandgap value.

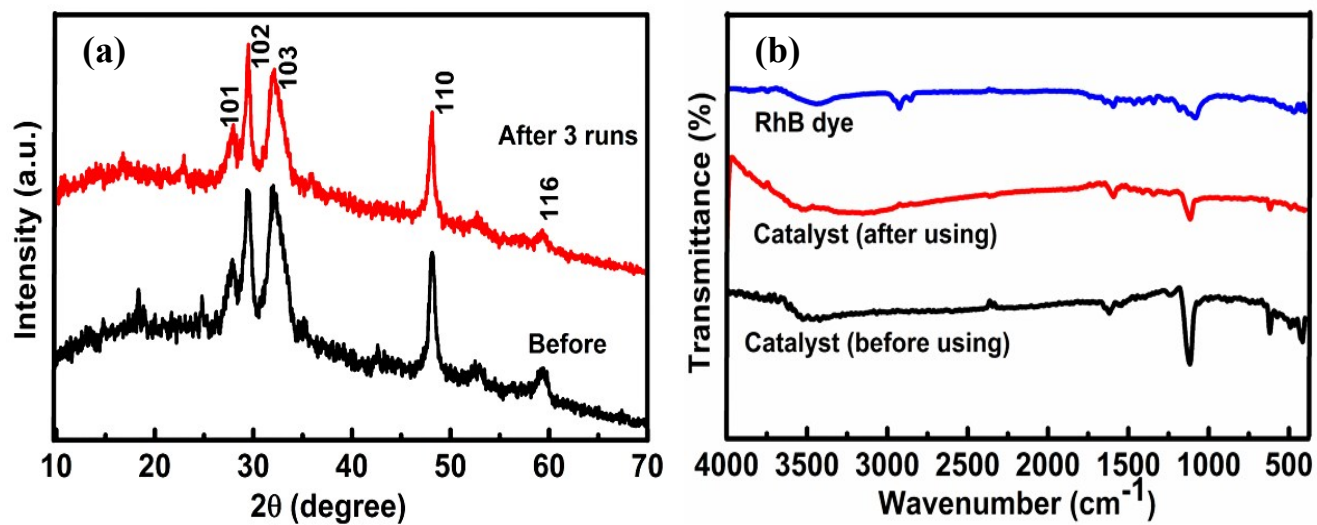


Fig. S4 (a) XRD patterns and (b) FTIR spectra of CuNiOS-0.6 before and after the RhB reduction reactions

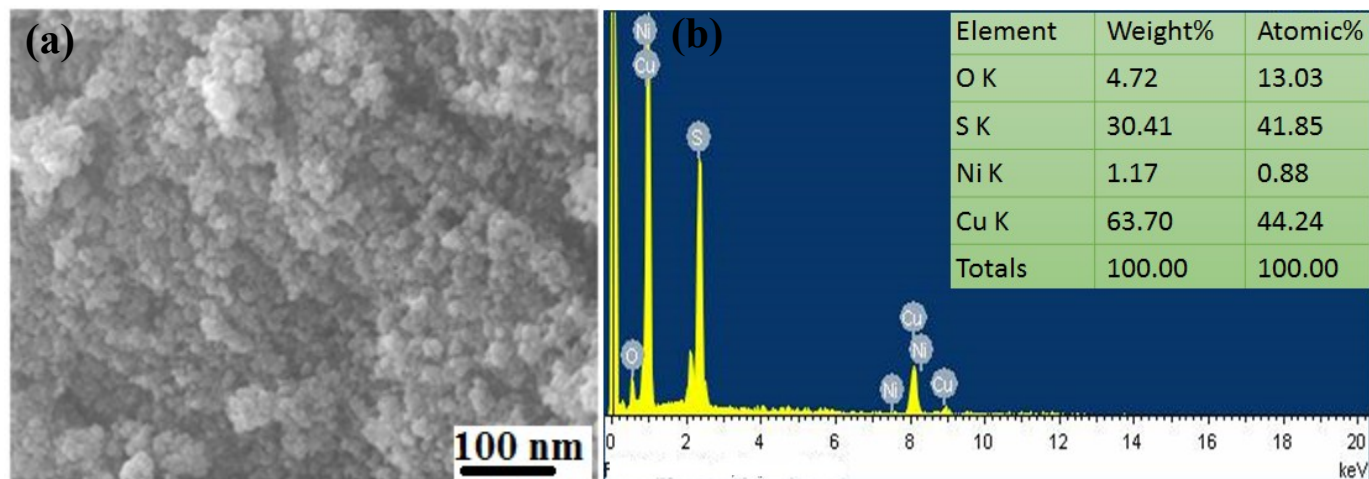


Fig. S5. (a) SEM image and (b) the EDS spectrum of CuNiOS-0.6 NPs after three runs.