Electronic supplementary information

In-situ generated copper nanoparticle catalyzed reduction of 4-nitrophenol

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Figure S1: (A) and (B) SEM images of the precursor compound at different resolution, (C) EDX pattern of the precursor compound.

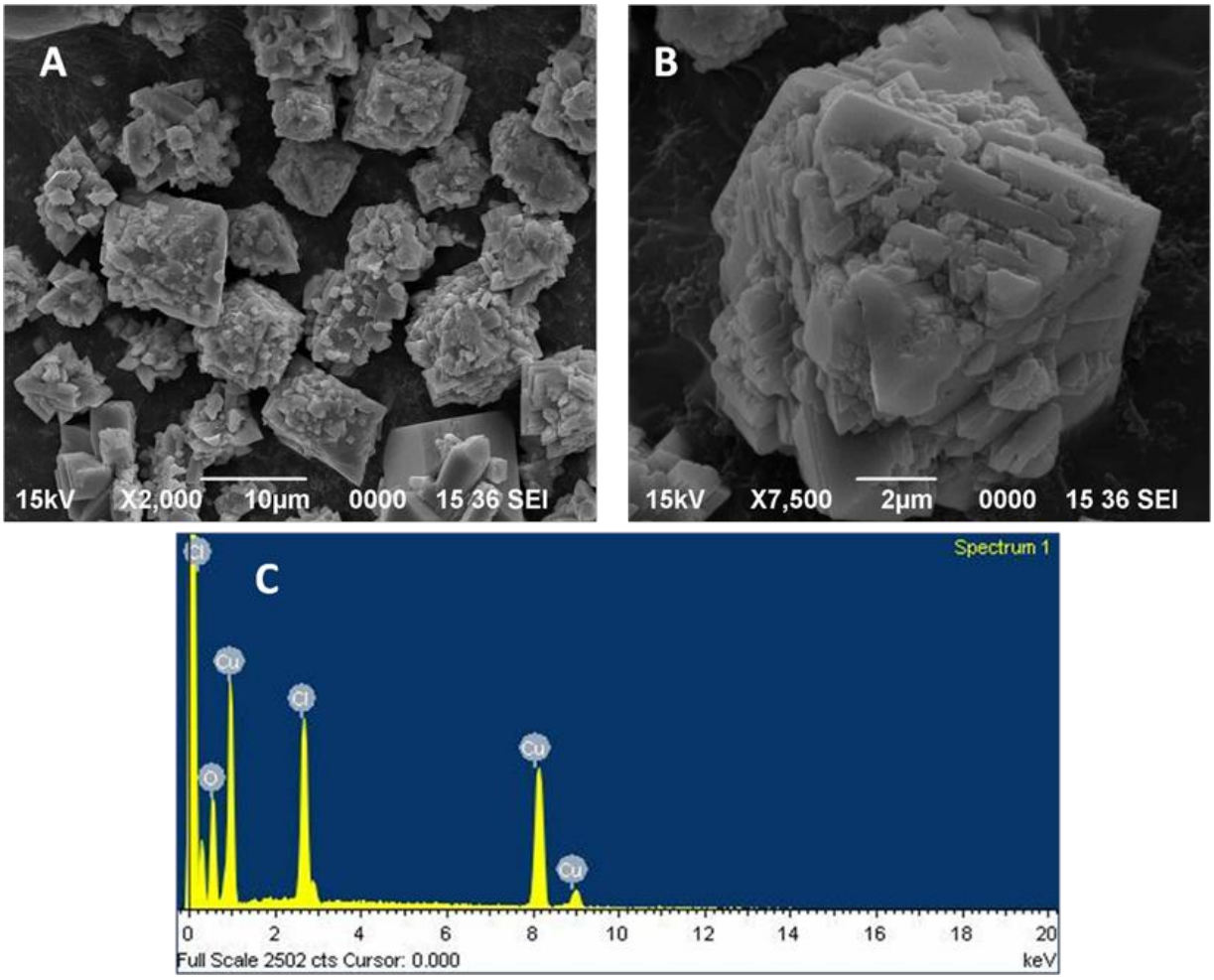


Figure S2: The time-dependent absorption spectra of the reaction solution over 3 mg of the catalyst.

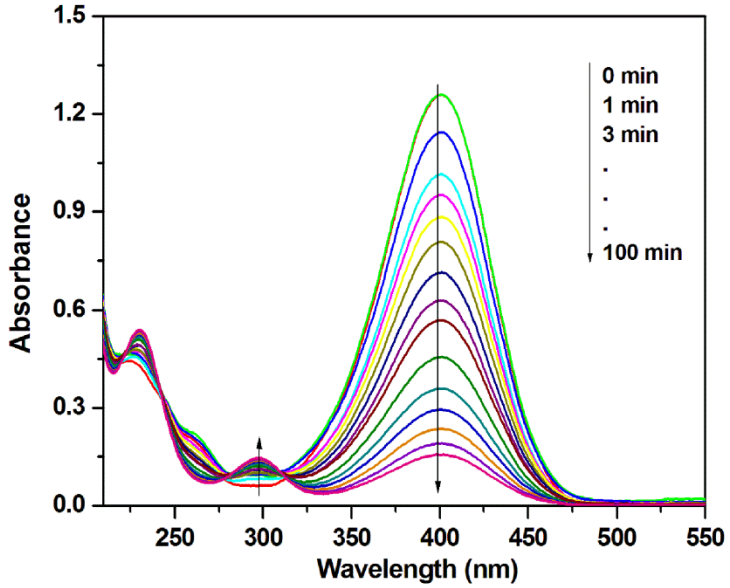


Figure S3: The plot of $\ln(A_t/A_0)$ against the reaction time over 3 mg of the catalyst.

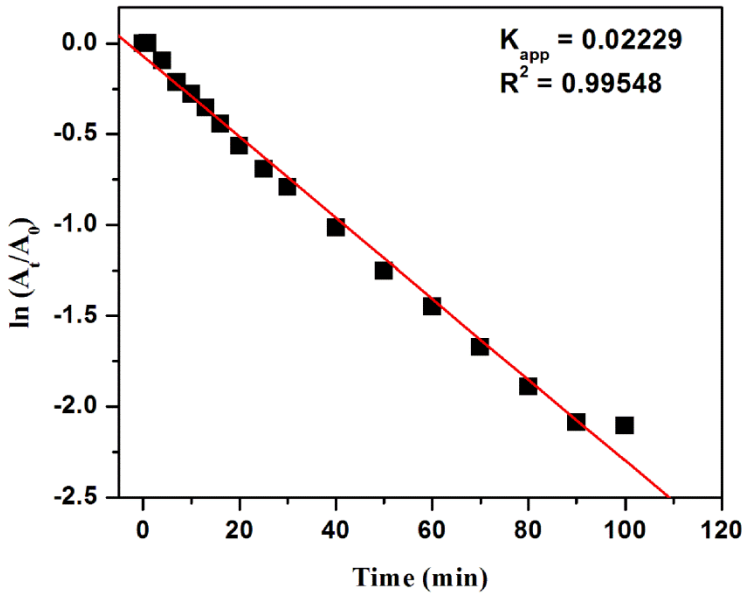


Figure S4: The time-dependent absorption spectra of the reaction solution over 5 mg of the catalyst.

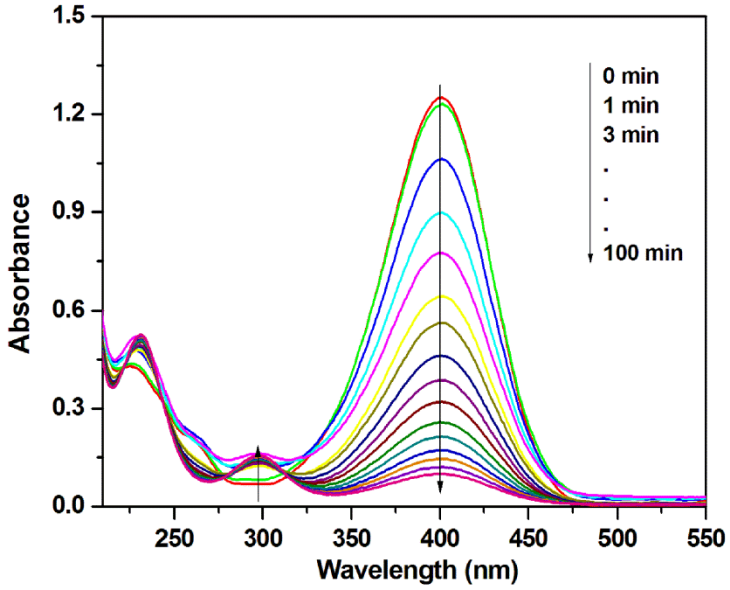


Figure S5: The plot of $\ln(A_t/A_0)$ against the reaction time over 5 mg of the catalyst.

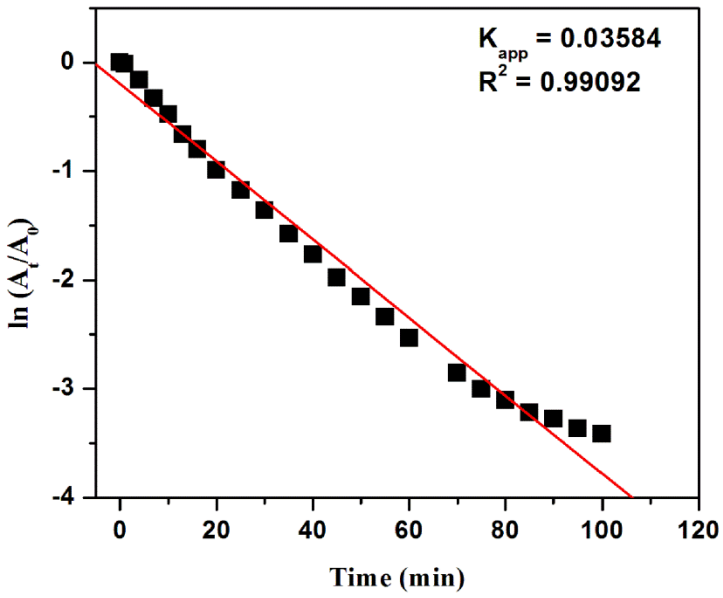


Figure S6: The time-dependent absorption spectra of the reaction solution over 7.5 mg of the catalyst.

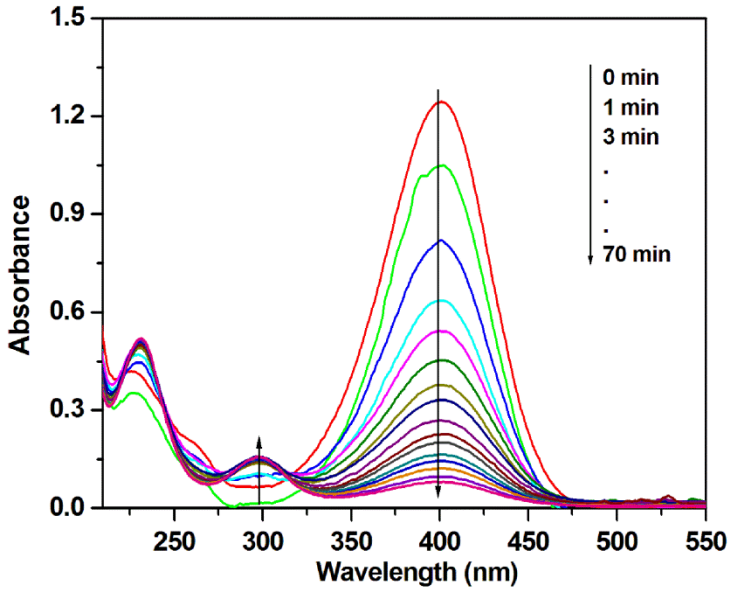


Figure S7: The plot of $\ln(A_t/A_0)$ against the reaction time over 7.5 mg of the catalyst.

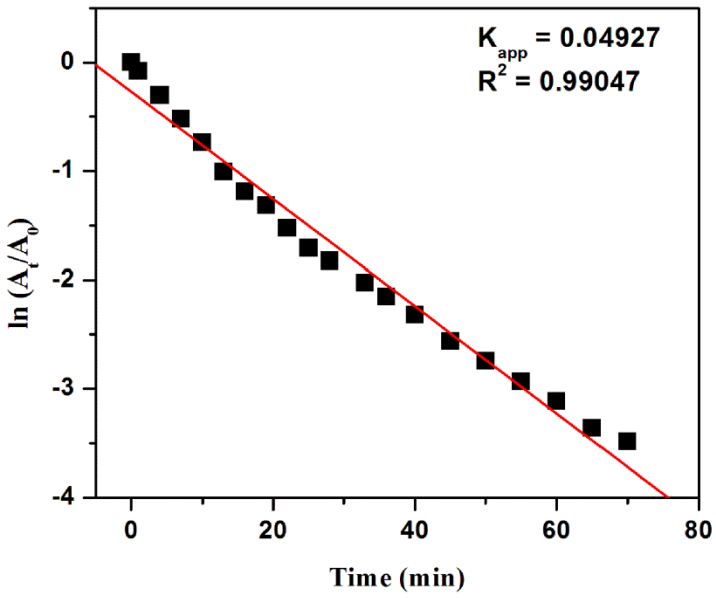


Figure S8: The time-dependent absorption spectra of the reaction solution over 9.5 mg of the catalyst.

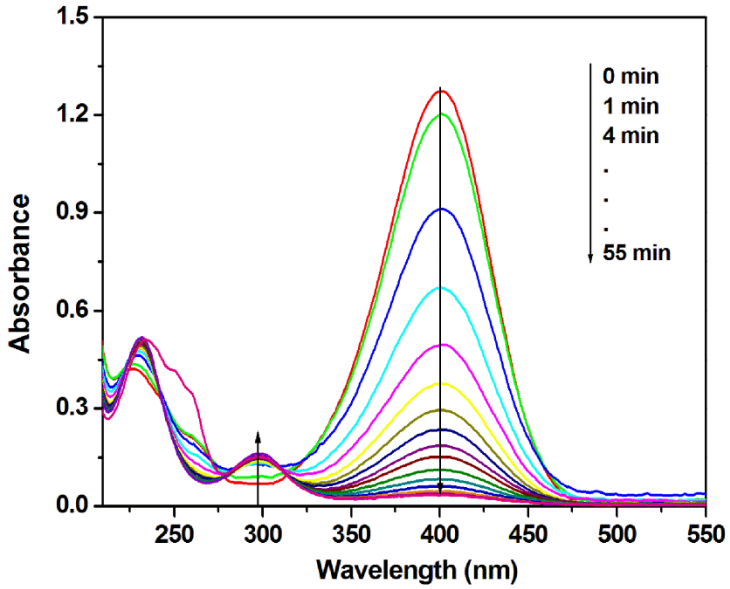


Figure S9: The plot of $\ln(A_t/A_0)$ against the reaction time over 9.5 mg of the catalyst.

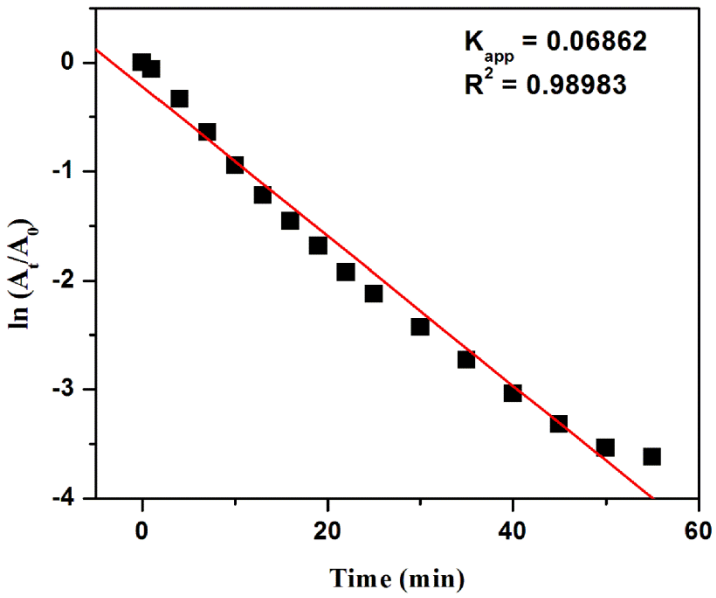


Figure S10: The time-dependent absorption spectra of the reaction solution over 13 mg of the catalyst.

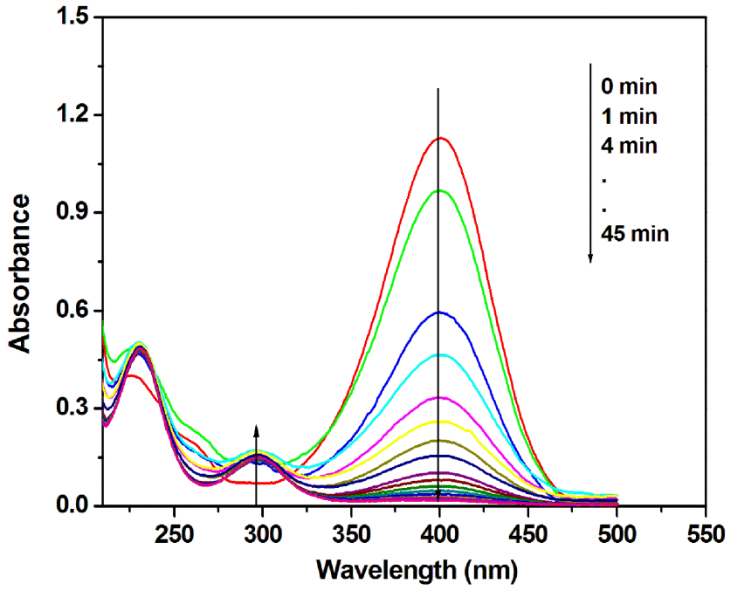
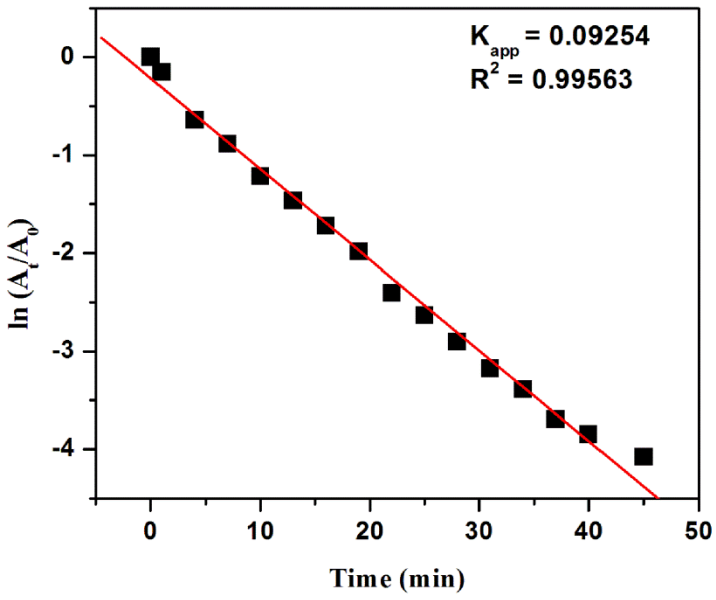


Figure S11: The plot of $\ln(A_t/A_0)$ against the reaction time over 13 mg of the catalyst.



Recyclability test

Figure S12: The time-dependent absorption spectra of the reaction solution over 12.5 mg of the catalyst for the first cycle.

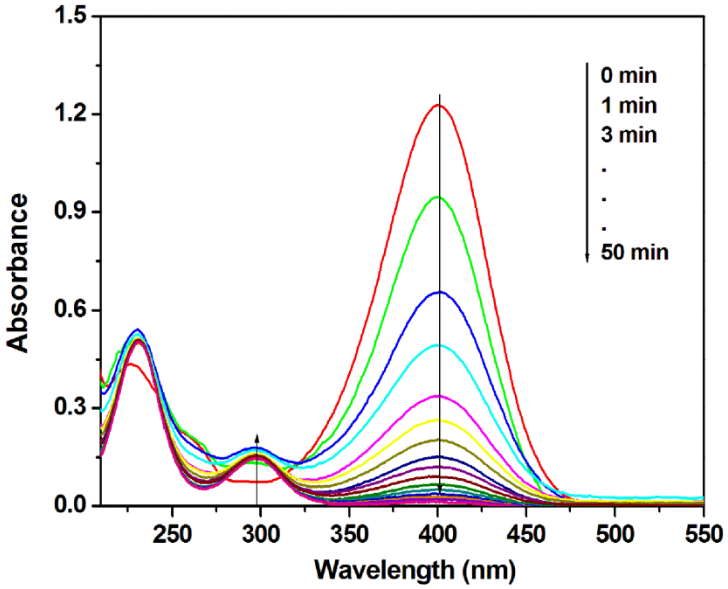


Figure S13: The plot of $\ln(A_t/A_0)$ against the reaction time over 12.5 mg of the catalyst for first cycle.

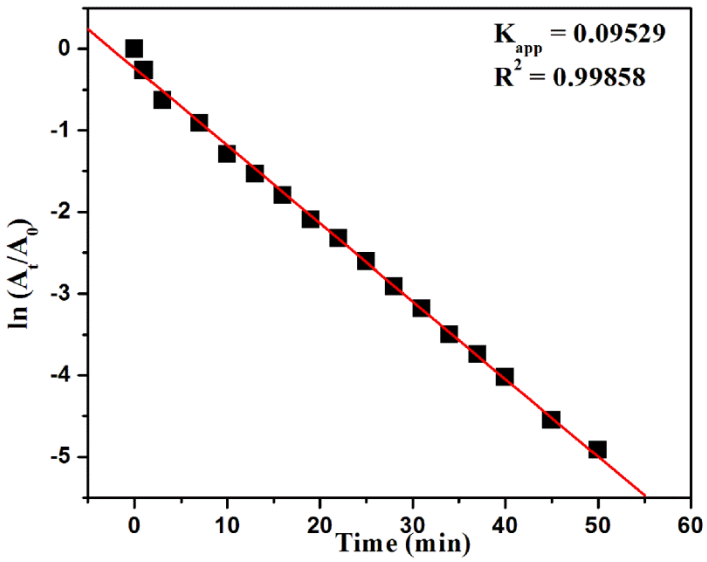


Figure S14: The time-dependent absorption spectra of the reaction solution over 12.5 mg of the catalyst for the second cycle.

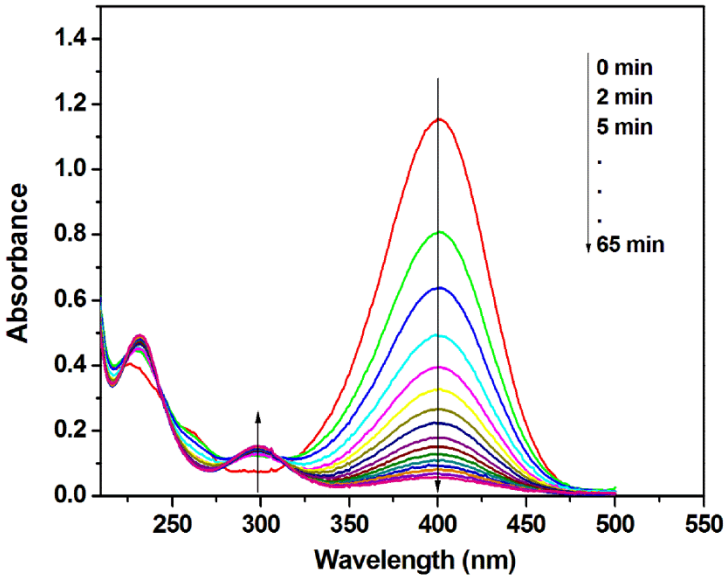


Figure S15: The plot of $\ln(A_t/A_0)$ against the reaction time over 12.5 mg of the catalyst for second cycle.

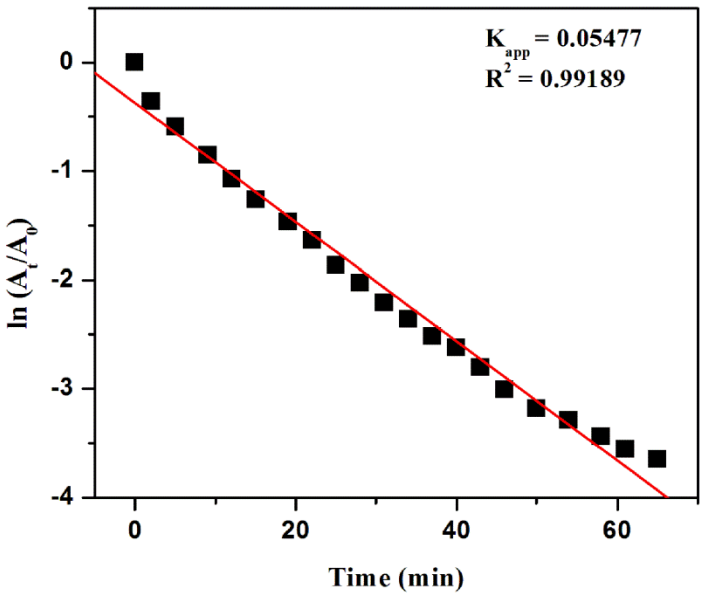


Figure S16: The time-dependent absorption spectra of the reaction solution over 12.5 mg of the catalyst for the third cycle.

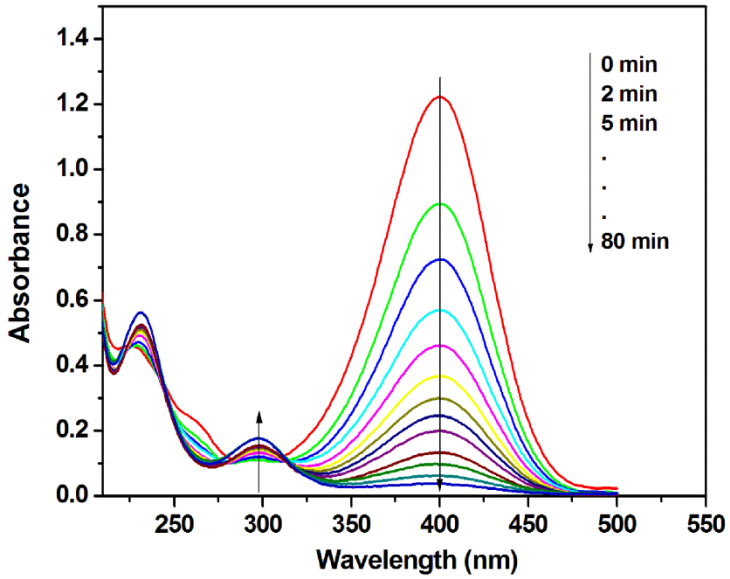


Figure S17: The plot of $\ln(A_t/A_0)$ against the reaction time over 12.5 mg of the catalyst for third cycle.

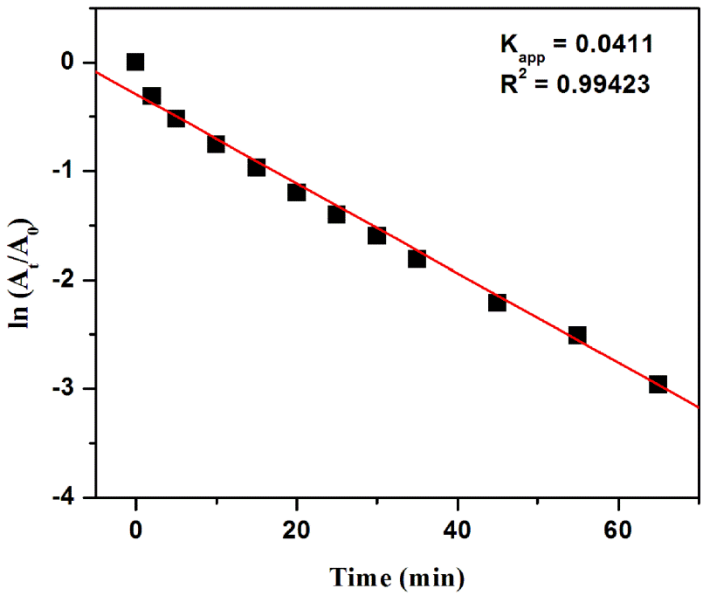


Figure S18: The time-dependent absorption spectra of the reaction solution over 12.5 mg of the catalyst for the fourth cycle.

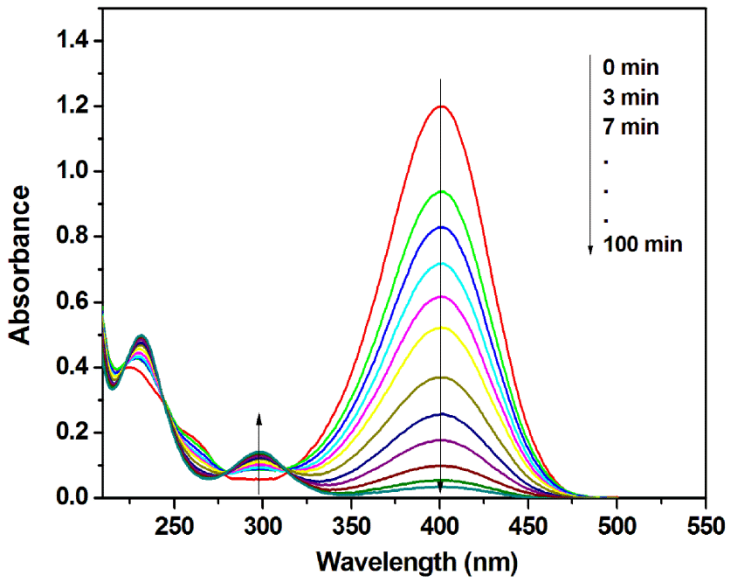


Figure S19: The plot of $\ln(A_t/A_0)$ against the reaction time over 12.5 mg of the catalyst for fourth cycle.

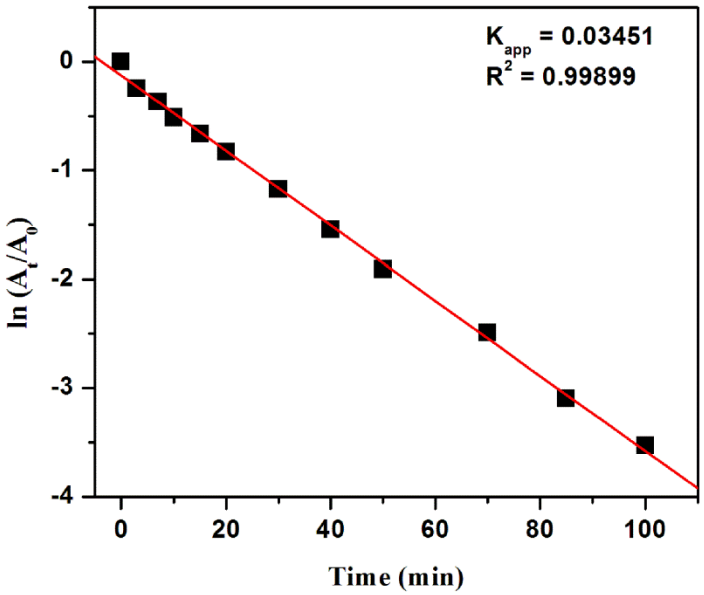


Figure S20: TEM image of the Cu nanoparticles after 4th reaction cycle.