Supplementary information for

## Magnetic $CoFe_2O_4$ -CNS nanocomposite as an efficient, recyclable catalyst for peroxymonosulfate activation and pollutant degradation

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Figure S1. XRD patterns of g-C<sub>3</sub>N<sub>4</sub>



**Figure S2.** (a)Removal of SA in the reaction systems with CoFe<sub>2</sub>O<sub>4</sub>-CNS and CoFe<sub>2</sub>O<sub>4</sub>-GO catalysts; (b) SEM and EDX spectra of CoFe<sub>2</sub>O<sub>4</sub>-GO.



Figure S3. Size distribution histogram with Gaussian-fitting curve of (a)  $CoFe_2O_4$ -CNS and (b)  $CoFe_2O_4$ 



Figure S4. SA removal efficiencies within 30 min at five consecutive reaction cycles.



Figure S5. Accumulative concentrations of leached Co ions from CoFe<sub>2</sub>O<sub>4</sub>-CNS and CoFe<sub>2</sub>O<sub>4</sub>.



Figure S6. XPS of Fe 2p spectra of CoFe<sub>2</sub>O<sub>4</sub>-CNS and CoFe<sub>2</sub>O<sub>4</sub> before and after the reaction.



**Figure S7.** (a) High-resolution N 1s spectra of  $CoFe_2O_4$ -CNS. (b) FT-IR spectra of the  $CoFe_2O_4$ -CNS before and after the reaction with PMS. (c) The transformation of grapheme N on the zigzag edges of CNS.