

Supplementary Information for

**Acetylacetone promoted high-efficiency coagulation toward arsenite
through a synchronous photooxidation process**

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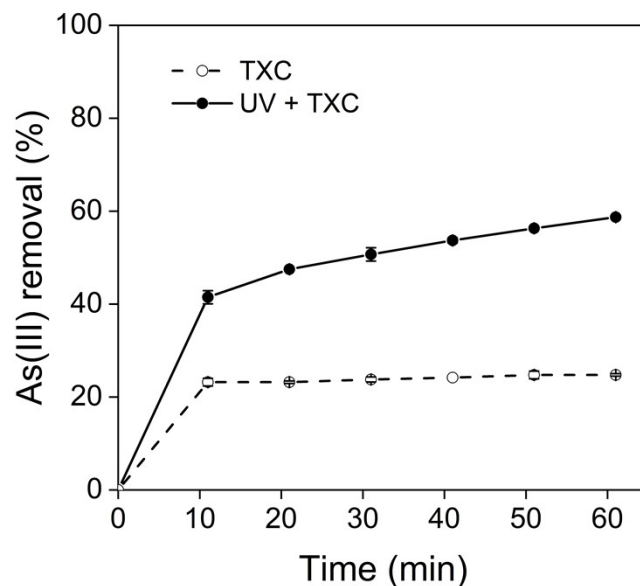


Fig. S1. As(III) removal kinetics in sole TXC_{1/4} (molar ratio of AA/Ti was 1/4 during preparation process) coagulation and UV-assisted coagulation systems. Initial As(III): 1.0 mg/L, dose: 5 mg Ti/L, solution pH: 5.0.

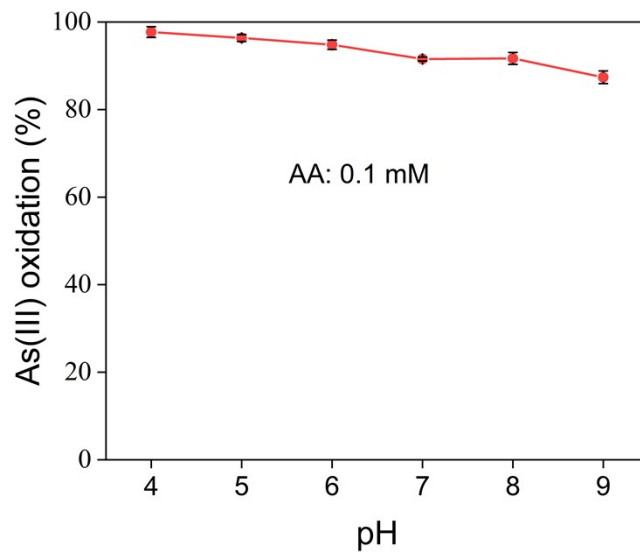


Fig. S2. Oxidation efficiency of As(III) by UV/AA under different pH conditions (4.0-9.0). Initial As(III): 1.0 mg/L, AA: 0.1 mM, oxidation time: 30 min.

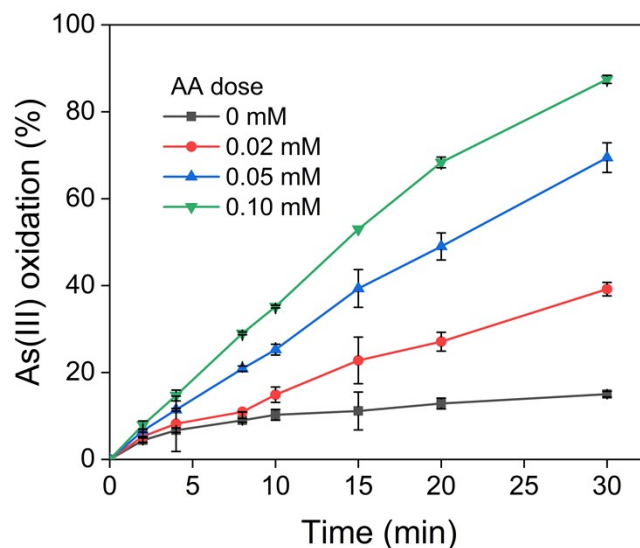


Fig. S3. Effect of AA dose on the oxidation efficiency of As(III). Initial As(III): 1.0 mg/L, AA: 0.02-0.1 mM, solution pH: 5.0.

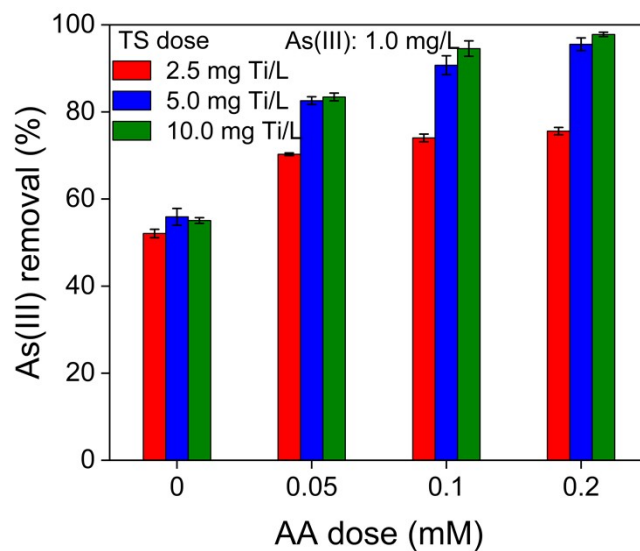


Fig. S4. Removal efficiency of As(III) in UV/AA + TS system with addition of various doses of TS (2.5-10 mg Ti/L) and AA (0.05-0.2 mM). Initial As(III): 1.0 mg/L, solution pH: 5.0, coagulation time: 30 min.

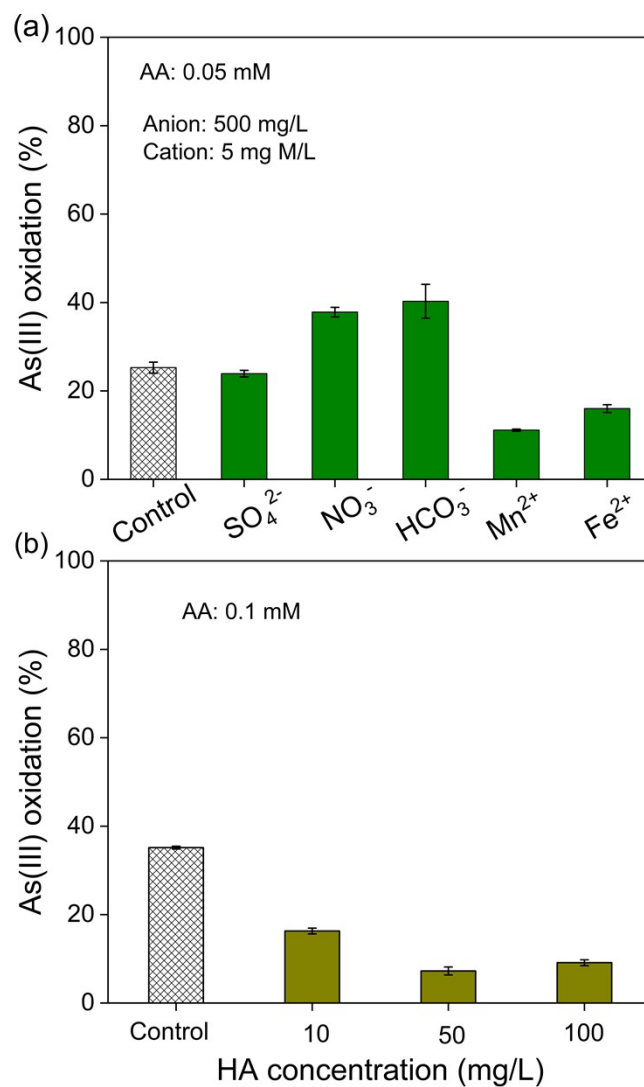


Fig. S5. Effects of inorganic ions (a) and HA (b) on the oxidation efficiency of As(III) by UV/AA. Initial As(III): 1.0 mg/L, AA: 0.05-0.1 mM, solution pH 5.0, anion: 500 mg/L, cation: 5 mg M/L, HA: 10-100 mg/L, oxidation time: 10 min.

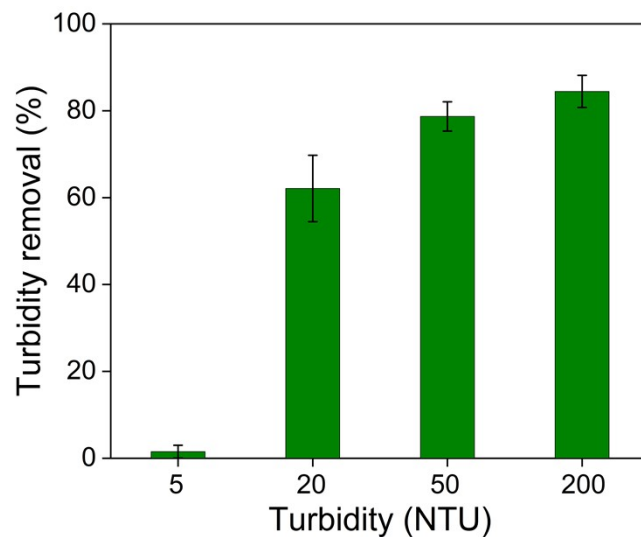


Fig. S6. Removal efficiency of turbidity in As(III)-turbidity coexisting wastewater by AA photooxidation-enhanced TS coagulation. As(III): 1.0 mg/L, TS: 5 mg Ti/L, AA: 0.05 mM, solution pH 5.0, coagulation time: 30 min.

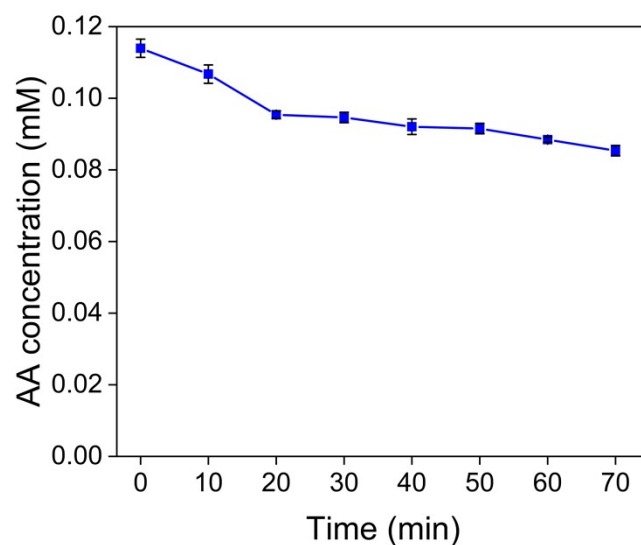


Fig. S7. Kinetic variation of AA concentration in UV/AA + TS system. Initial As(III): 1.0 mg/L, AA: 0.1 mM, TS: 10 mg Ti/L, solution pH: 5.0.