Supplementary Material

Investigation of catalytic activation of peroxydisulfate on Cu-doped mesoporous silica-based particles (Cu-BMS) for efficient degradation of Methylene Blue

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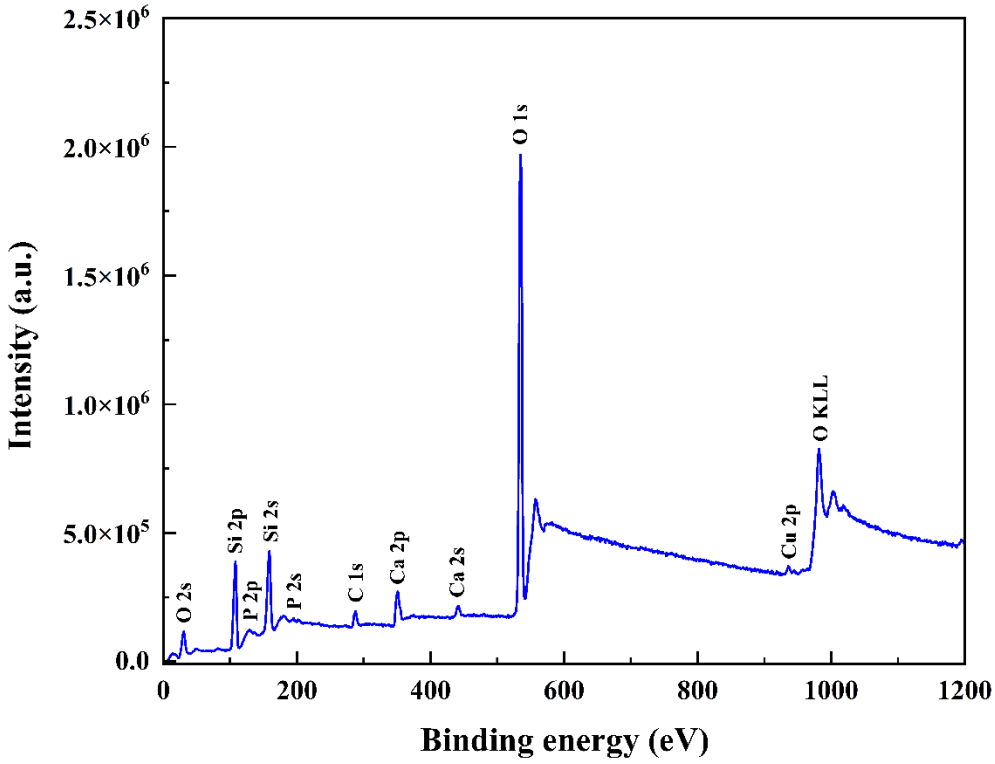

Fig. S1. The XPS survey spectrum of Cu-BMS particles.

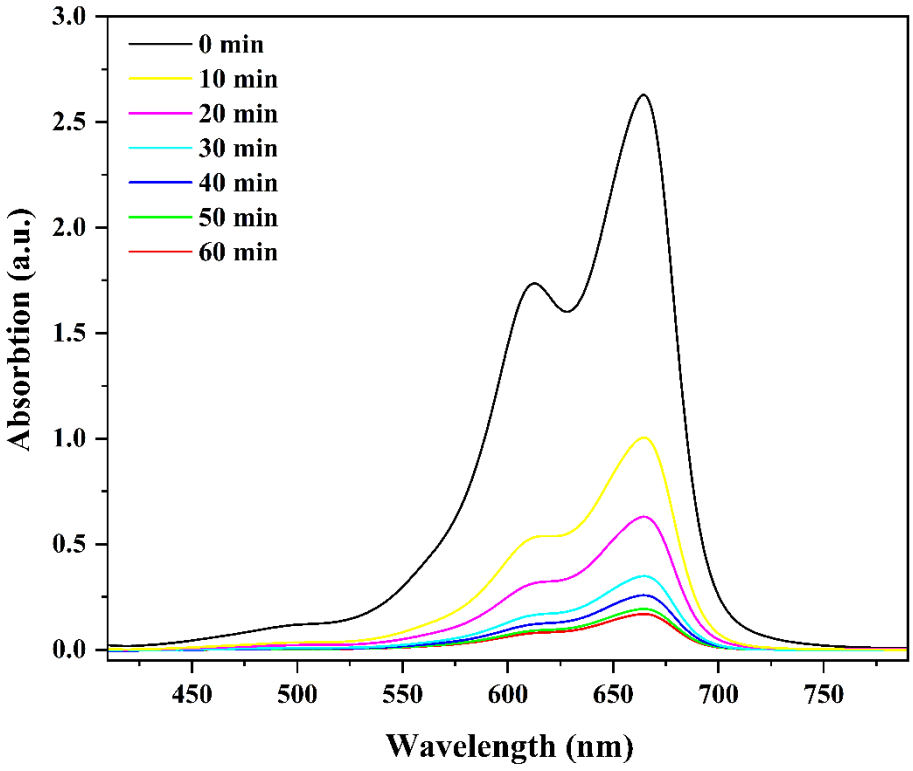

Fig. S2. Time-dependent UV-Vis spectra of MB decomposition in the Cu-BMS/PDS system. (Parameters: [Cu-BMS] = 0.5 g/L, [PDS] = 2.0 g/L, [MB] = 100 mg/L and pH = 6.5).

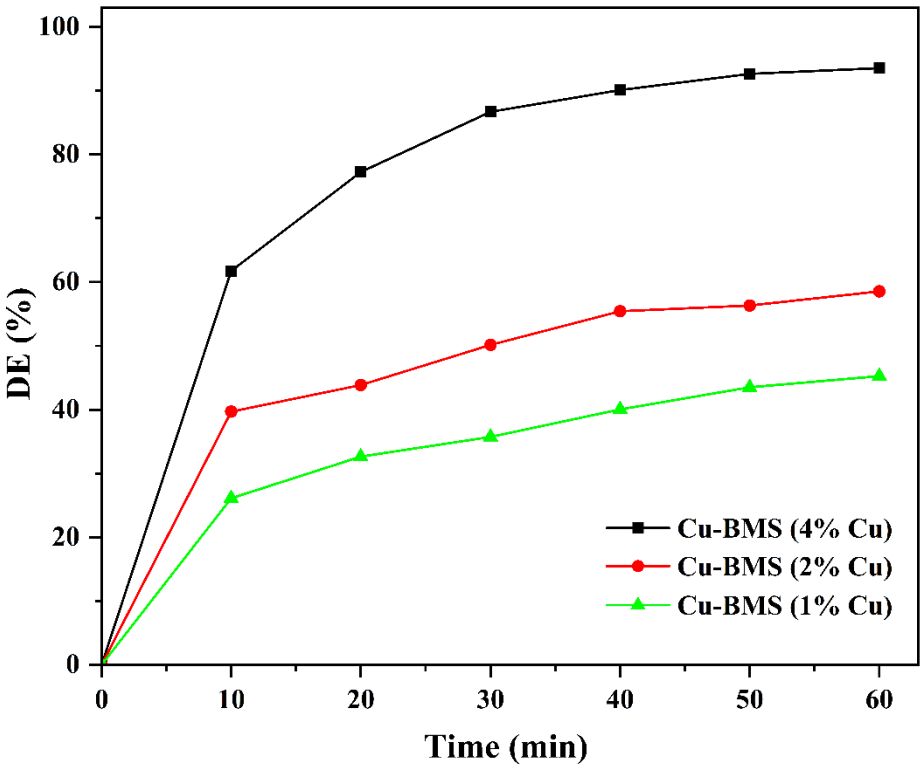

Fig. S3. Effect of varying Cu amount in the Cu-BMS on the DE% in the Cu-BMS/PDS system (Parameters: [Cu-BMS] = 0.5 g/L, [PDS] = 2.0 g/L, [MB] = 100 mg/L and pH = 6.5).

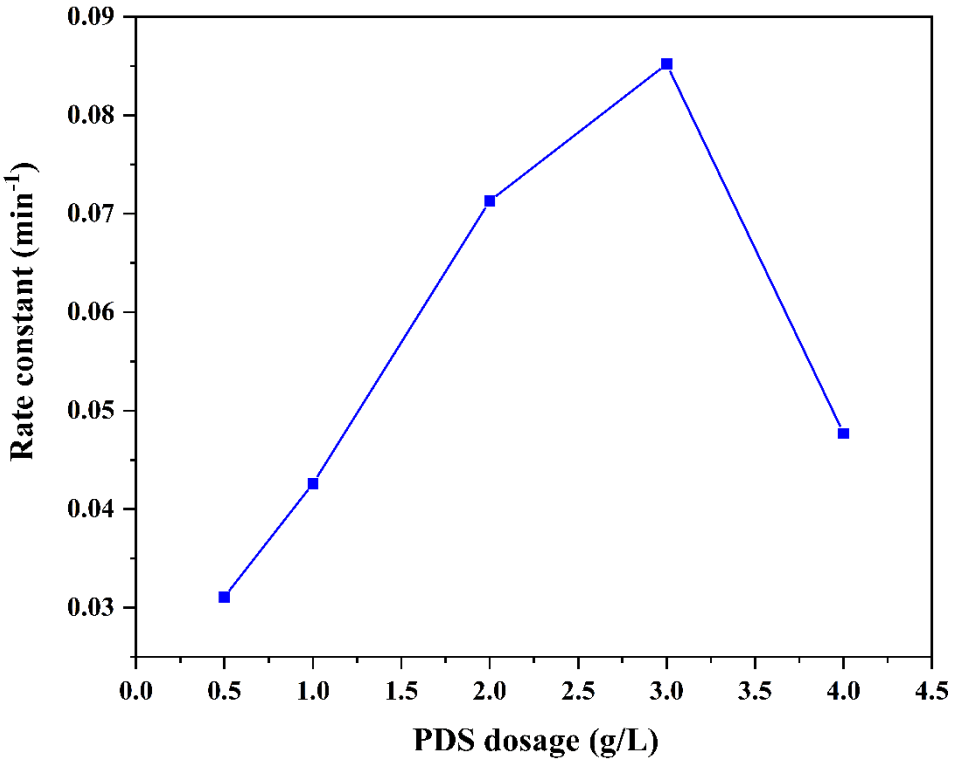

Fig. S4. The dependence of degradation reaction rate constant vs. PDS dosage.

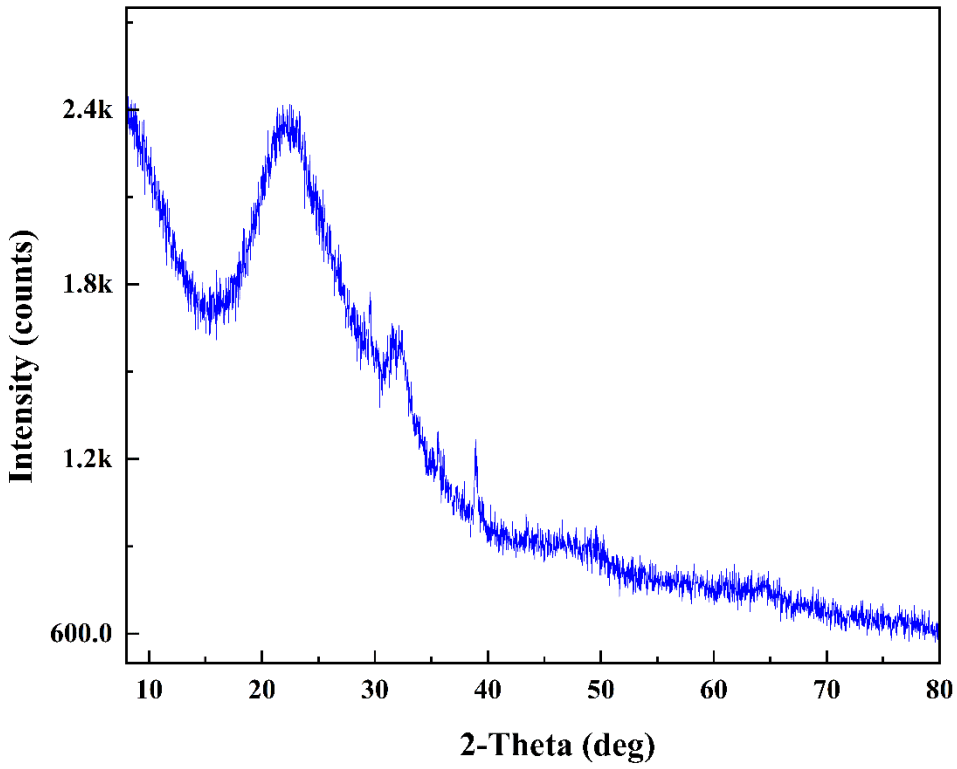

Fig. S5. XRD pattern of Cu-BMS particles after twelfth degradation cycles.

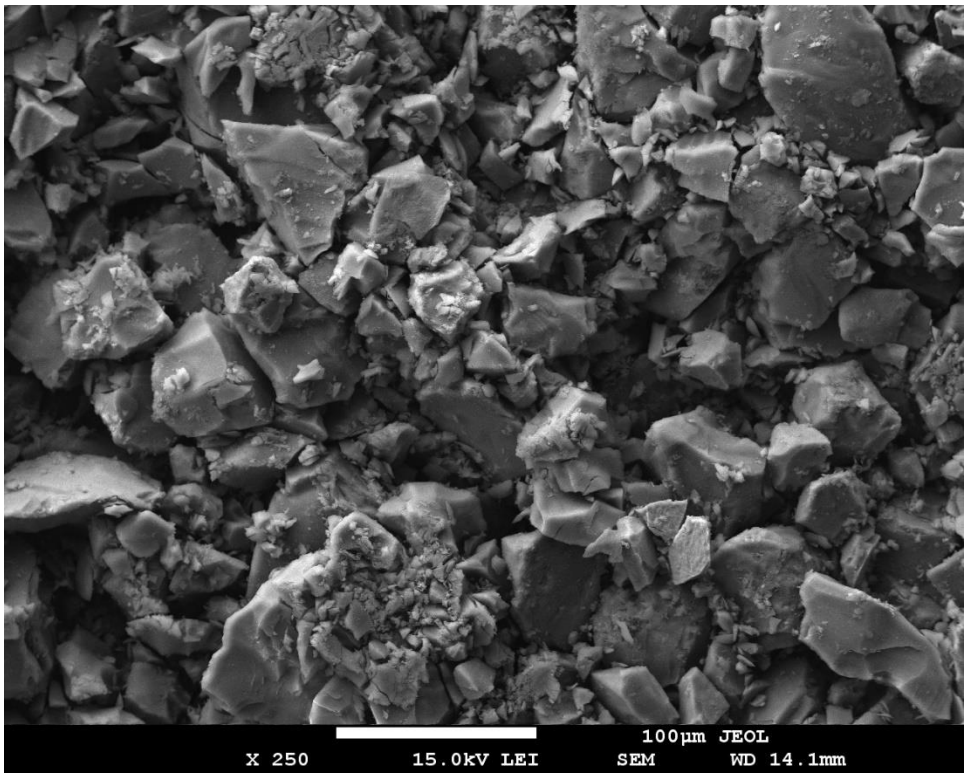

Fig. S6. SEM image of Cu-BMS particles after twelfth degradation cycles.

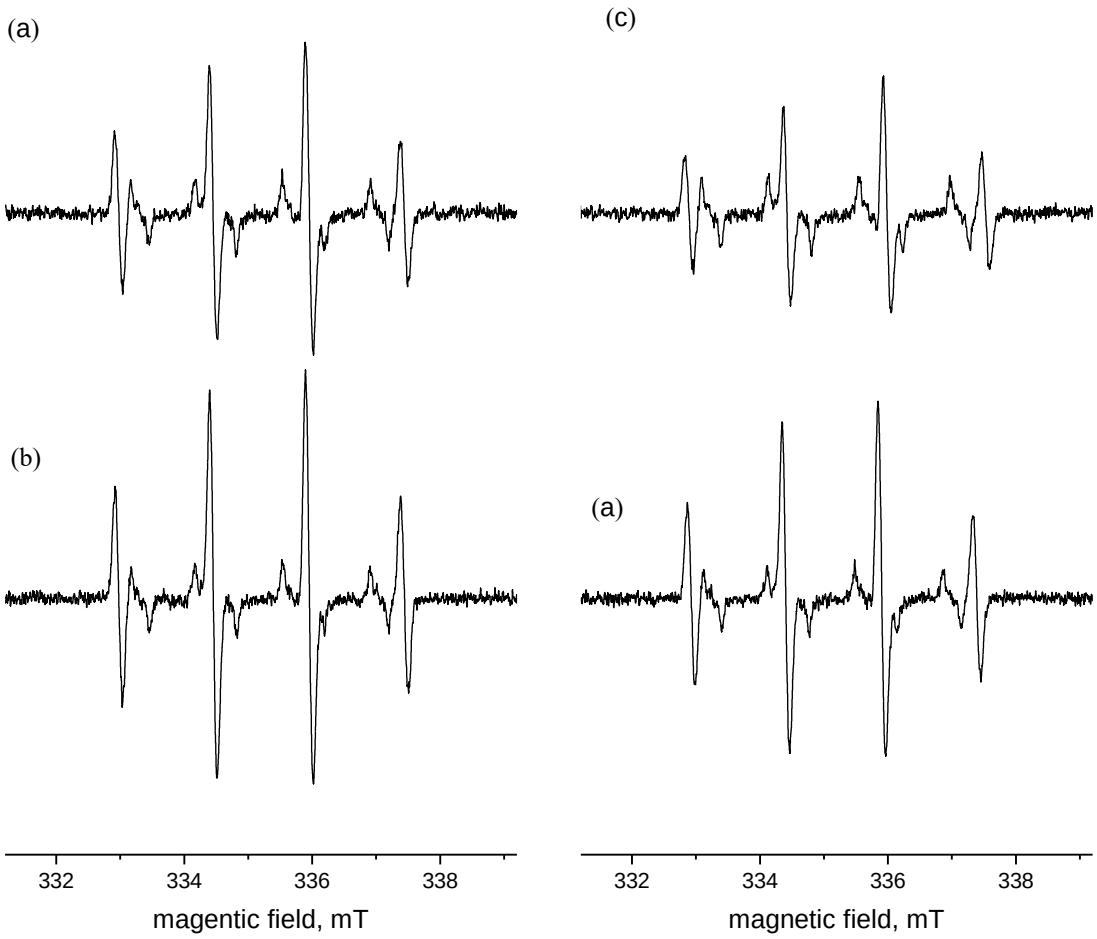

Fig. S7. Experimental EPR spectra of ˙DMPO-OH and ˙DMPO-SO_4^- spin adducts detected in the aqueous reaction system Cu-BMS/PDS/DMPO/air (a, b) and PDS/DMPO/air (c, d) measured from 3 min (a,c) and 11 min (b,d) after mixing. Information on experimental conditions is summarized in Experimental part.