

Supplementary material

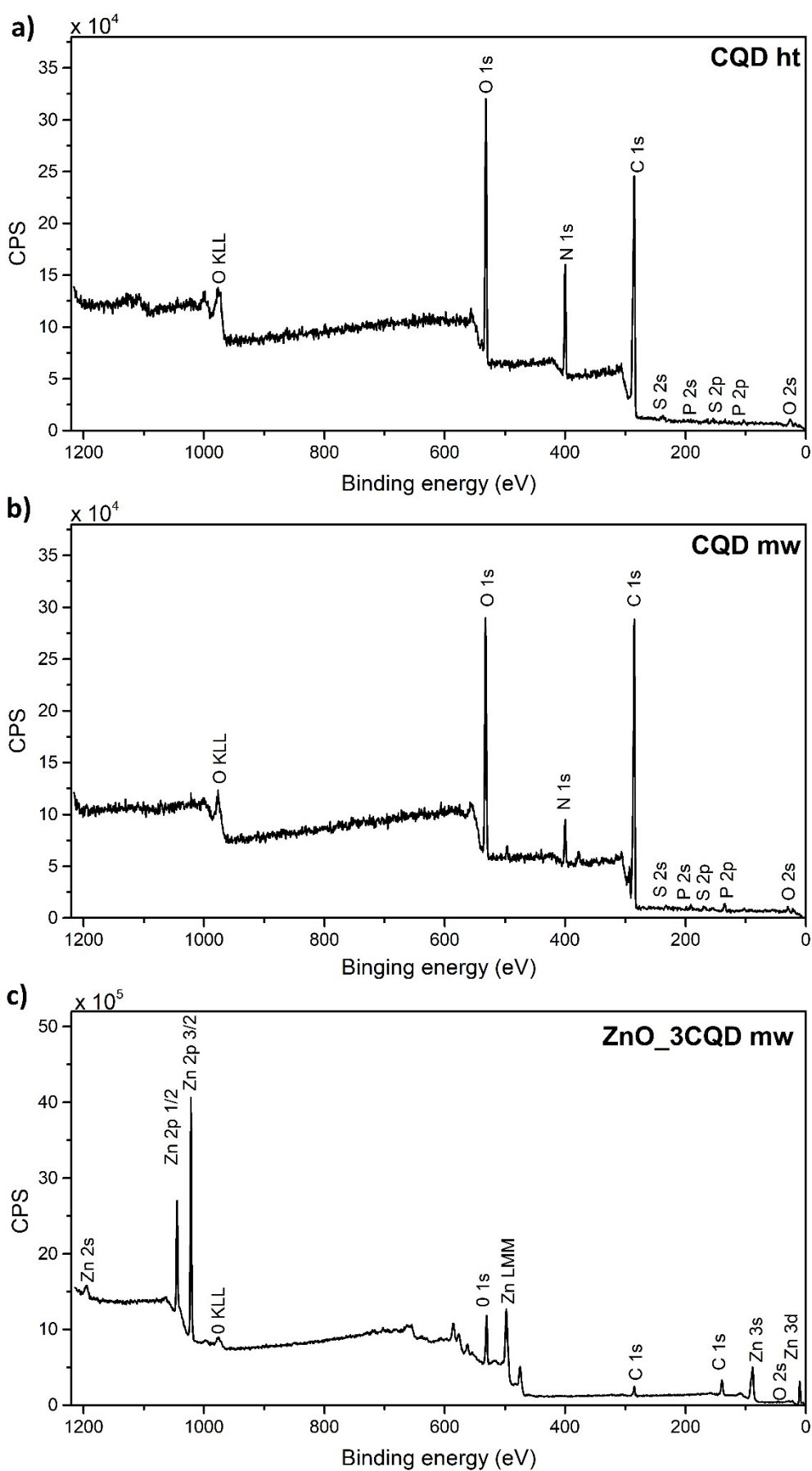


Figure S1. XPS survey spectrum of CD_ht (a), CD_mw (b) and ZnO_3CD_mw (c).

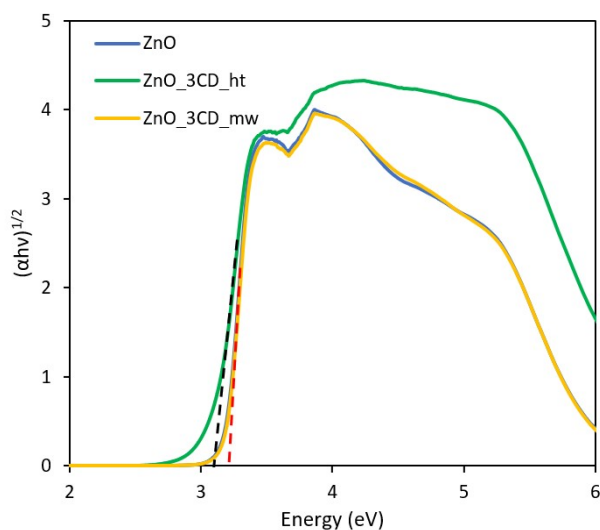


Figure S2. Tauc plot of ZnO, ZnO_CD_ht, and ZnO_3CD_mw.

Table S1. Results of PL deconvolution on ZnO, ZnO_3CD_ht and ZnO_3CD_ht samples

Emission range (nm)	Peak area of the sample		
	ZnO	ZnO_3CD_ht	ZnO_3CD_mw
500-530	5.5%	6.7%	8.1%
560-580	16.7%	36.5%	33.1%
630-640	38.3%	34.7%	35.8%
635-700	39.5%	18.4%	2.4%
710-760	-	3.8%	20.6%

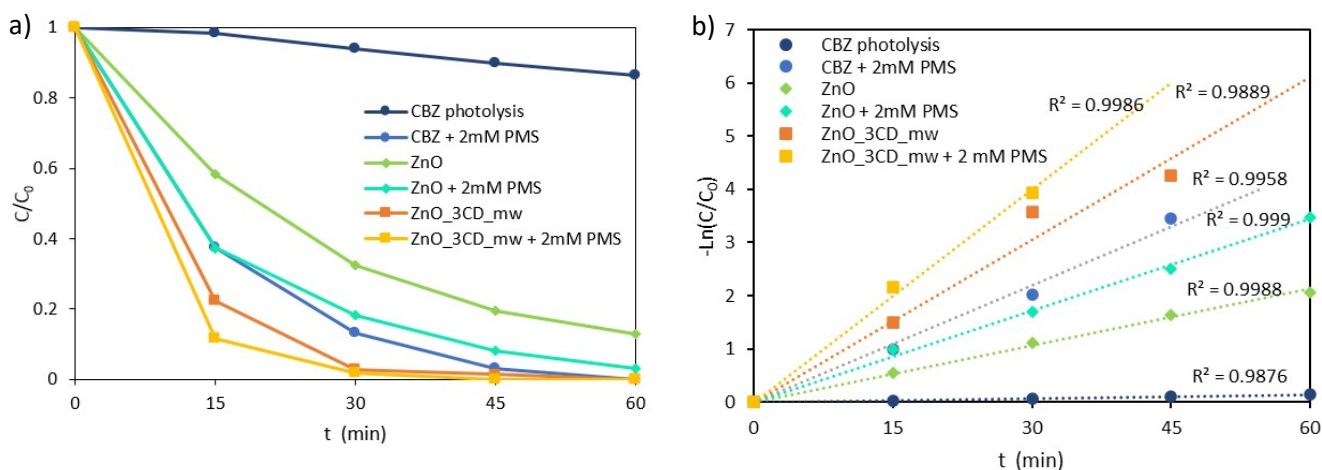


Figure S3. Degradation of CBZ by photolysis, and photocatalysis in the presence of ZnO and ZnO-3CD_mw with and without PMS addition; the plots of C/C_0 versus time (a) and plots of $-\ln(C/C_0)$ versus time (b). Experimental conditions: $C_{CBZ} = 14 \text{ mg} \cdot \text{dm}^{-3}$, photocatalyst loading of $0.5 \text{ g} \cdot \text{dm}^{-3}$, $C_{PMS} = 2 \text{ mM}$, temperature $20 \text{ }^\circ\text{C}$, light source: Xe lamp.

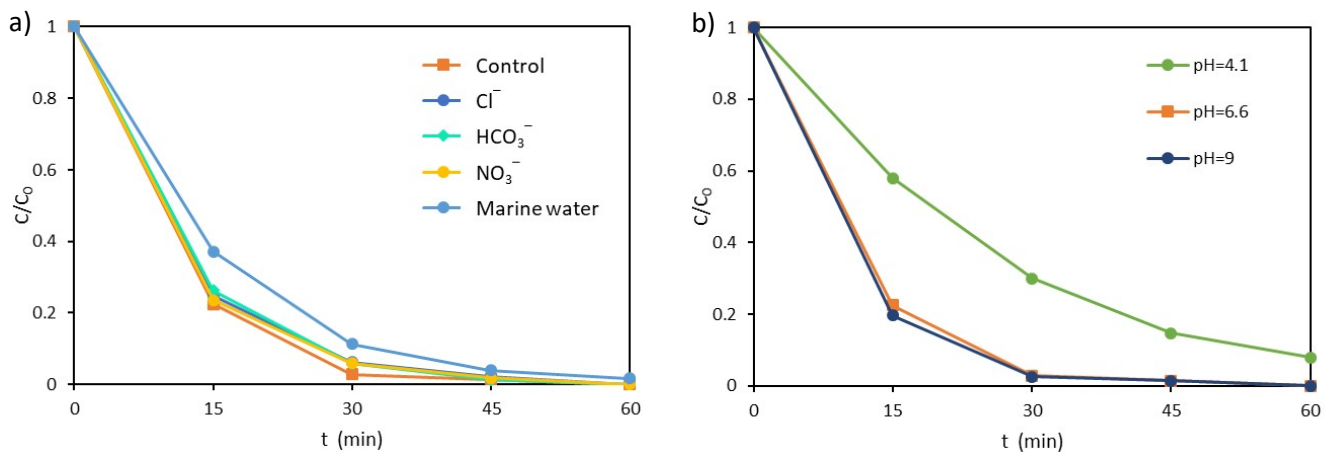


Figure S4. Effects of selected ions (a) and pH (b) on the photocatalytic degradation of CBZ in the presence of ZnO-3CD_mw. Experimental conditions: $C_{\text{CBZ}} = 14 \text{ mg} \cdot \text{dm}^{-3}$, photocatalyst loading of $0.5 \text{ g} \cdot \text{dm}^{-3}$, $C_{\text{ions}} = 10 \text{ mM}$, temperature $20 \text{ }^\circ\text{C}$, light source: Xe lamp.