

Supplementary Information

Part I. Characterization of Diatomites and CeO₂-Diatomite Composites

ESEM Analysis

EDAX spectra of D, MD, and corresponding CeO₂-diatomite composites expressing the elemental composition were displayed in Figure S1.

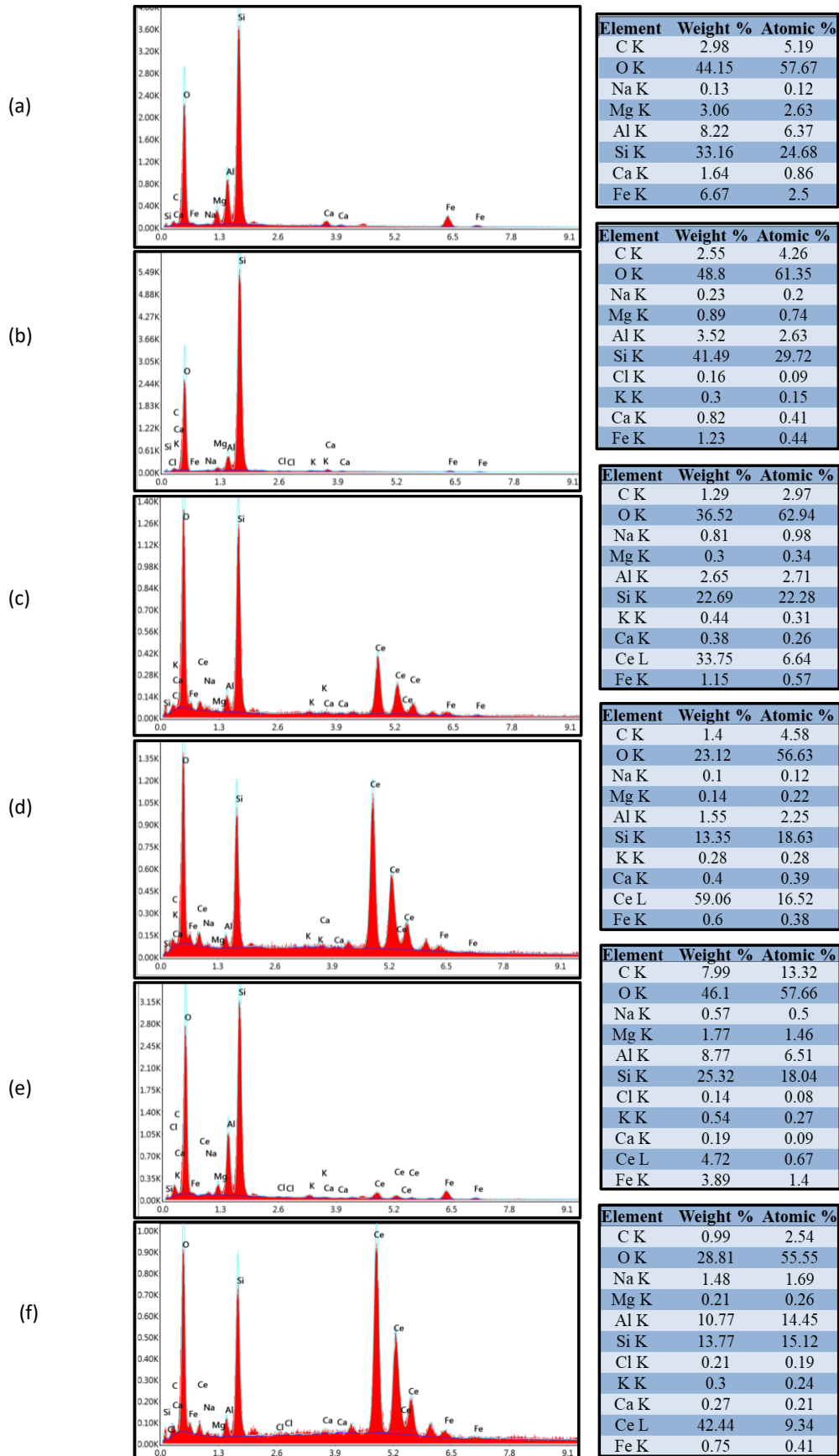


Figure S1. EDAX spectra of (a) D, (b) MD, (c) DC-11, (d) DC-12, (e) MDC-11, (f) MDC-12.

BET Analysis

BET adsorption/desorption isotherms and BJH pore-size distribution curves of diatomites and representative CeO₂-diatomite composites were displayed in Figure S2 and Figure S3.

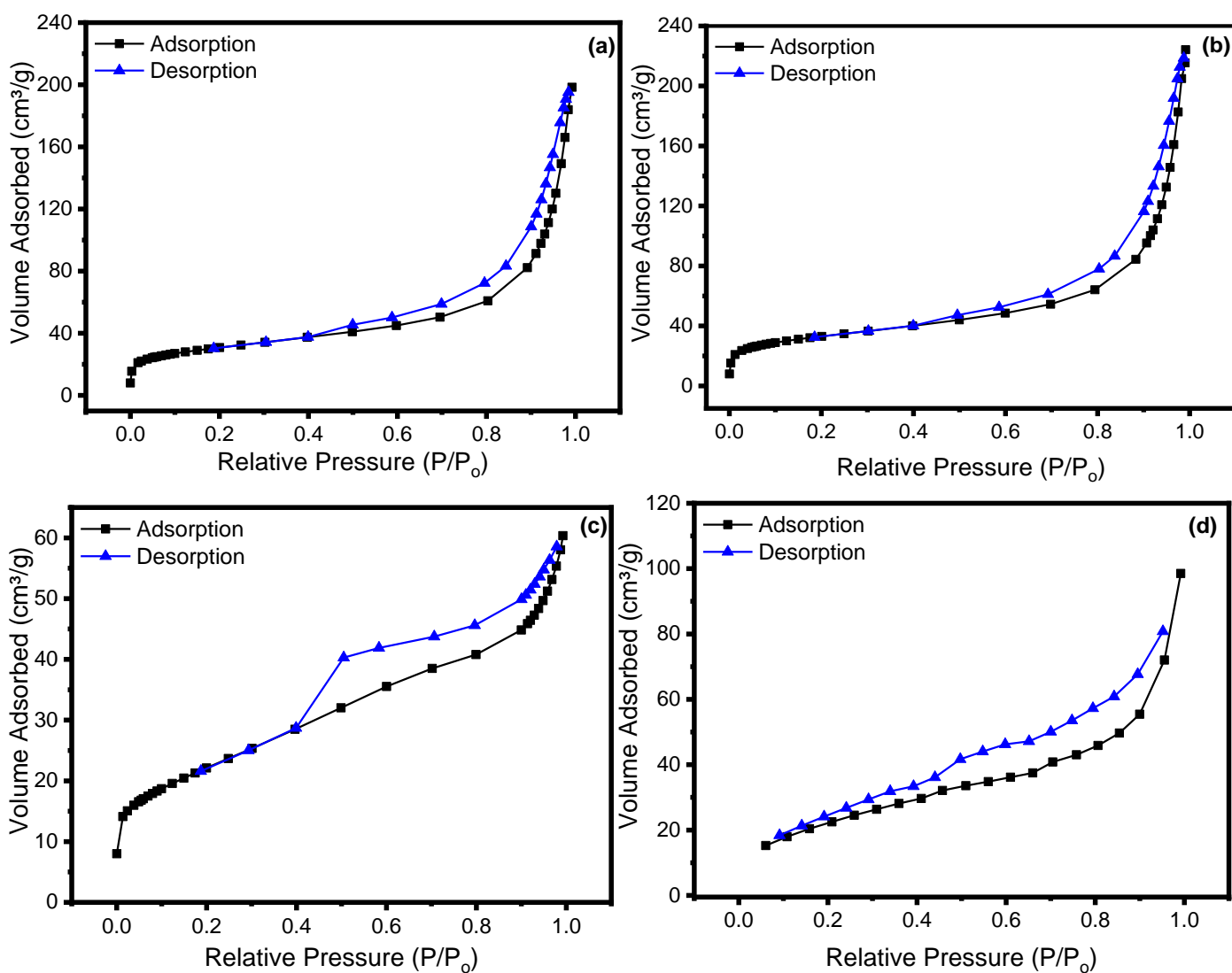


Figure S2. BET adsorption-desorption isotherms of (a) D, (b) MD, (c) DC-11, (d) MDC-11.

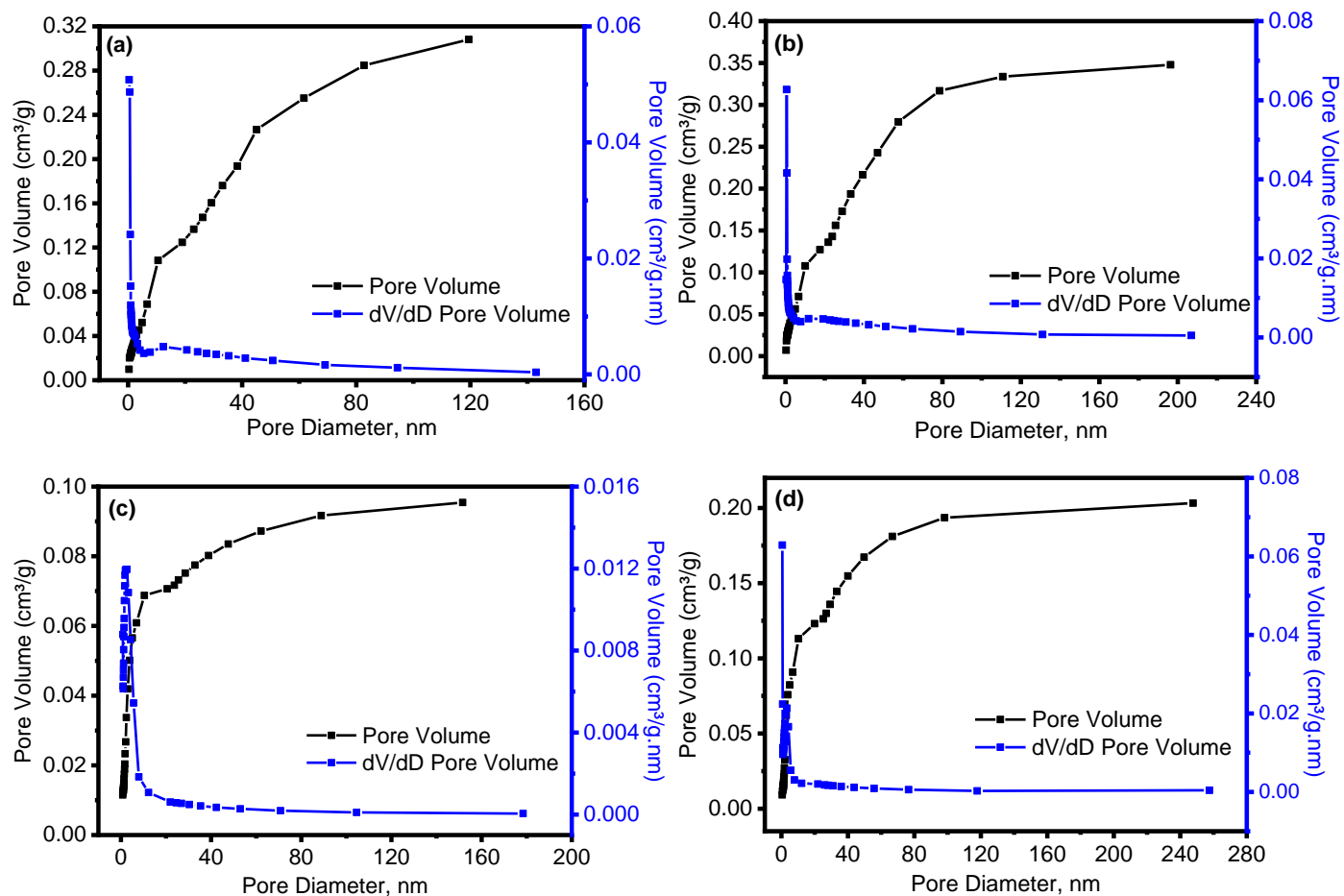


Figure S3. Pore size distributions of (a) D, (b) MD, (c) DC-11, (d) MDC-11.

Zeta Potential Analysis

Zeta potential of analysis of diatomites and CeO_2 -diatomite composites were displayed in Figure S4.

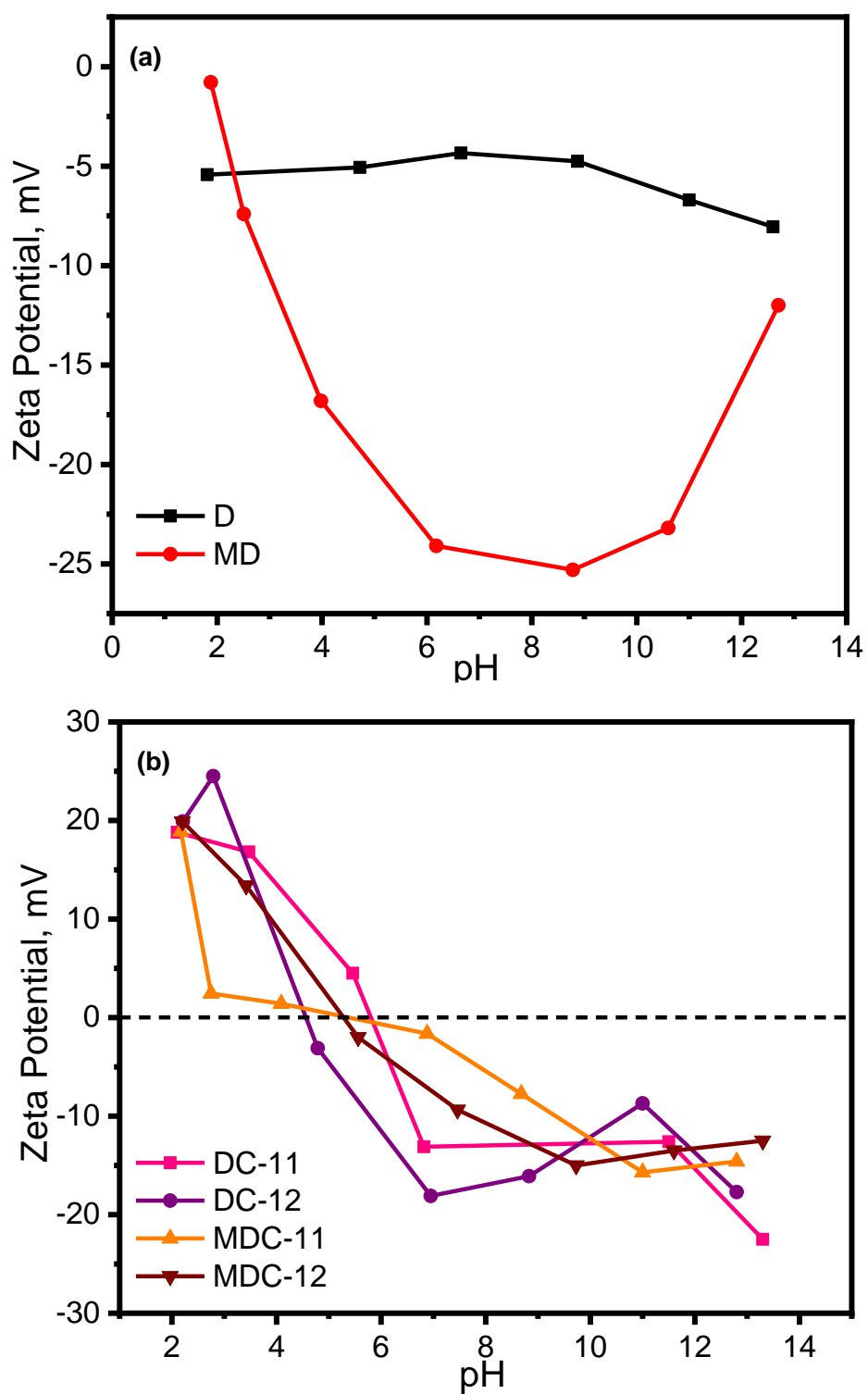


Figure S4. Zeta potential plots of (a) diatomites, (b) CeO_2 -diatomite composites as a function of pH.

Part II. Photocatalytic Degradation of MB using CeO₂-diatomite Composites

UV-vis spectral features of MB with different irradiation times (0-300 min) using two different CeO₂-diatomite composites doses (0.25 mg/L and 0.50 mg/L) were shown in Figure S5 and Figure S6.

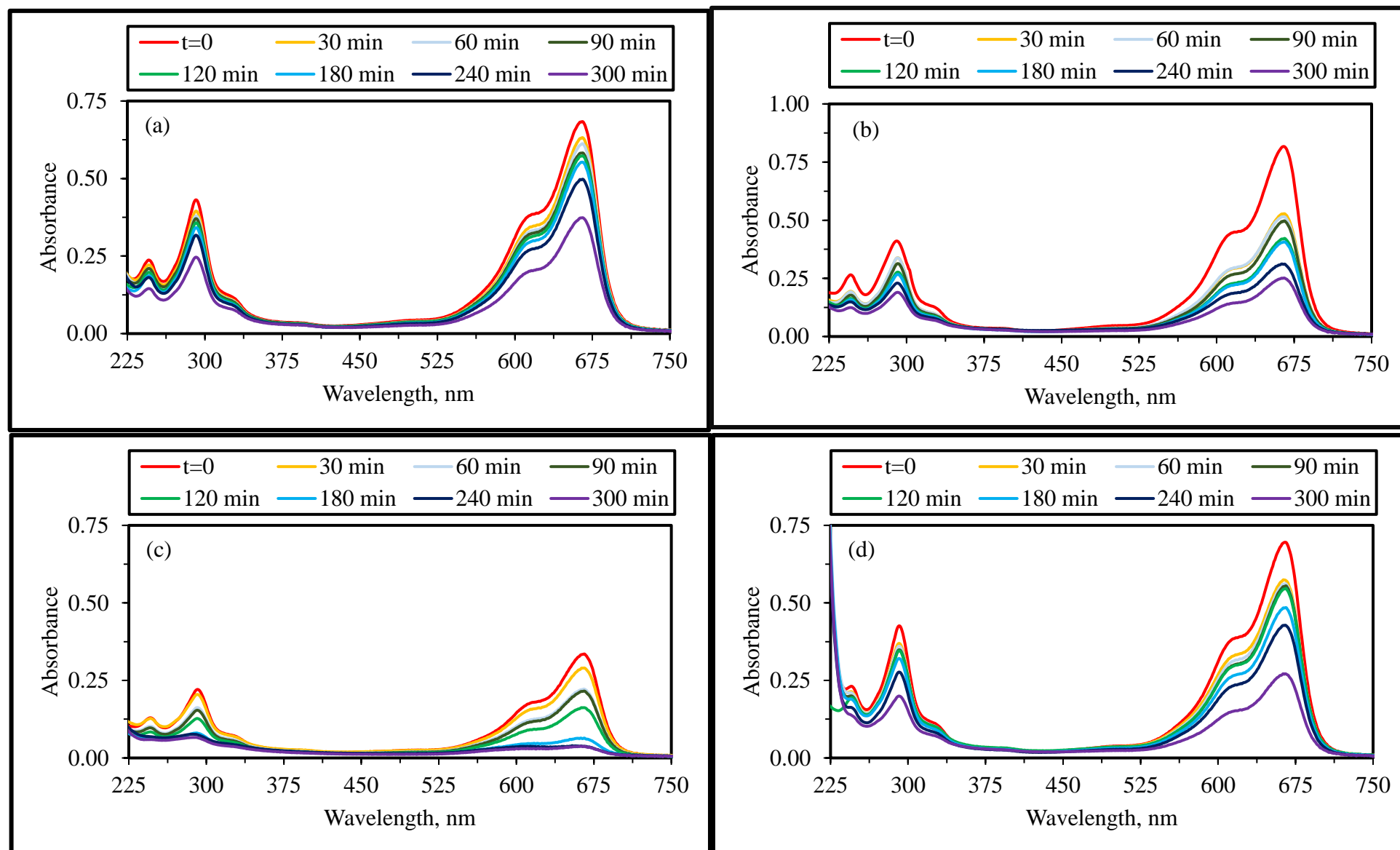


Figure S5. UV-vis absorption spectra of MB using 0.25 mg/mL dose of (a) DC-11, (b) DC-12, (c) MDC-11, and (d) MDC-12.

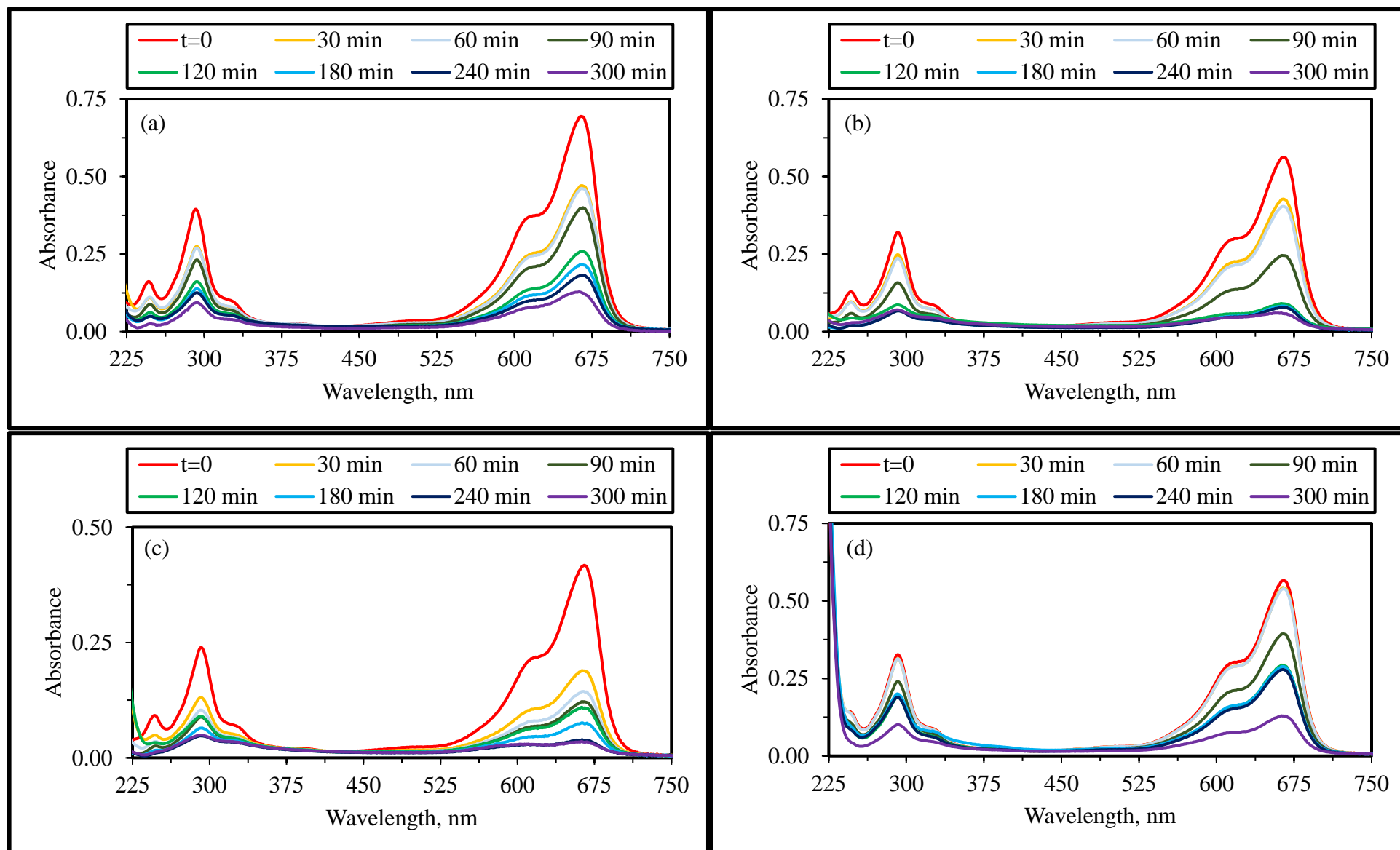


Figure S6. UV-vis absorption spectra of MB using 0.50 mg/mL dose of (a) DC-11, (b) DC-12, (c) MDC-11, and (d) MDC-12.