

Supplemental materials

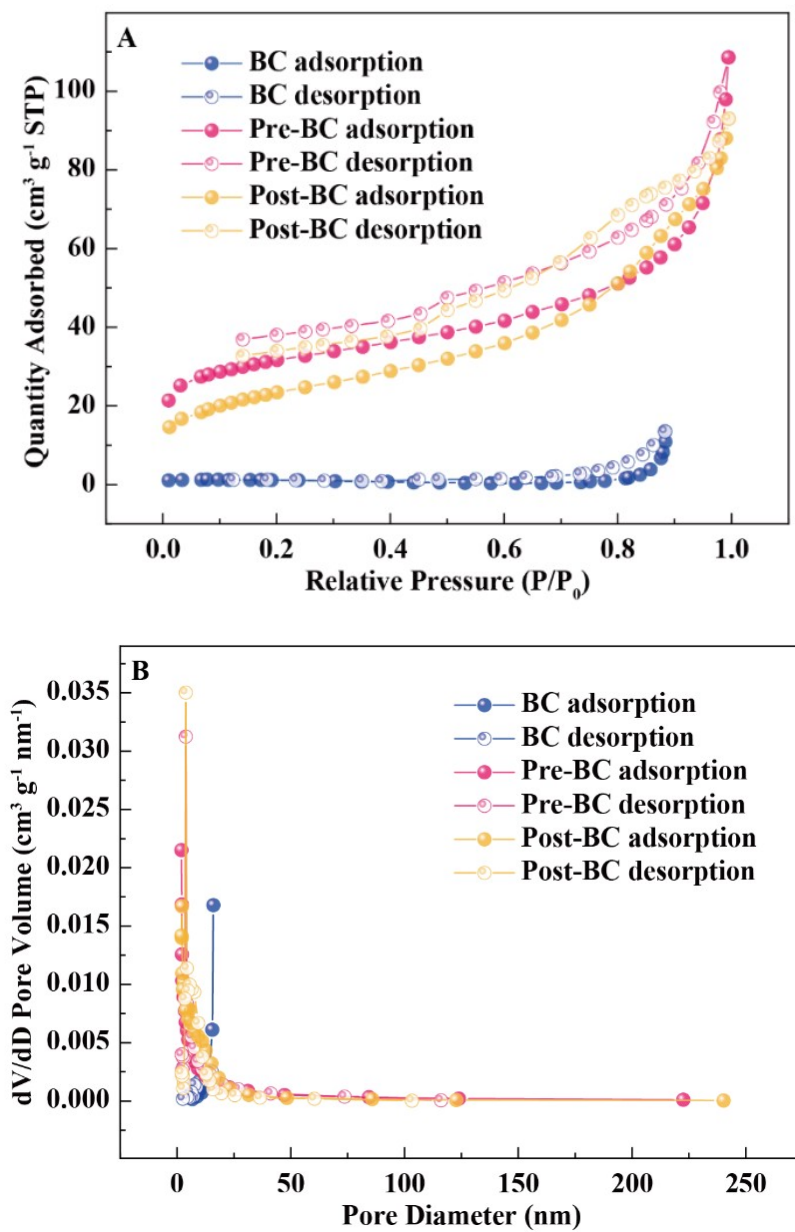


Figure S1 BET of BC, Pre-BC, and Post-BC. A: N₂ adsorption/desorption isotherm. B: BJH

dV/dD adsorption/desorption pore volume.

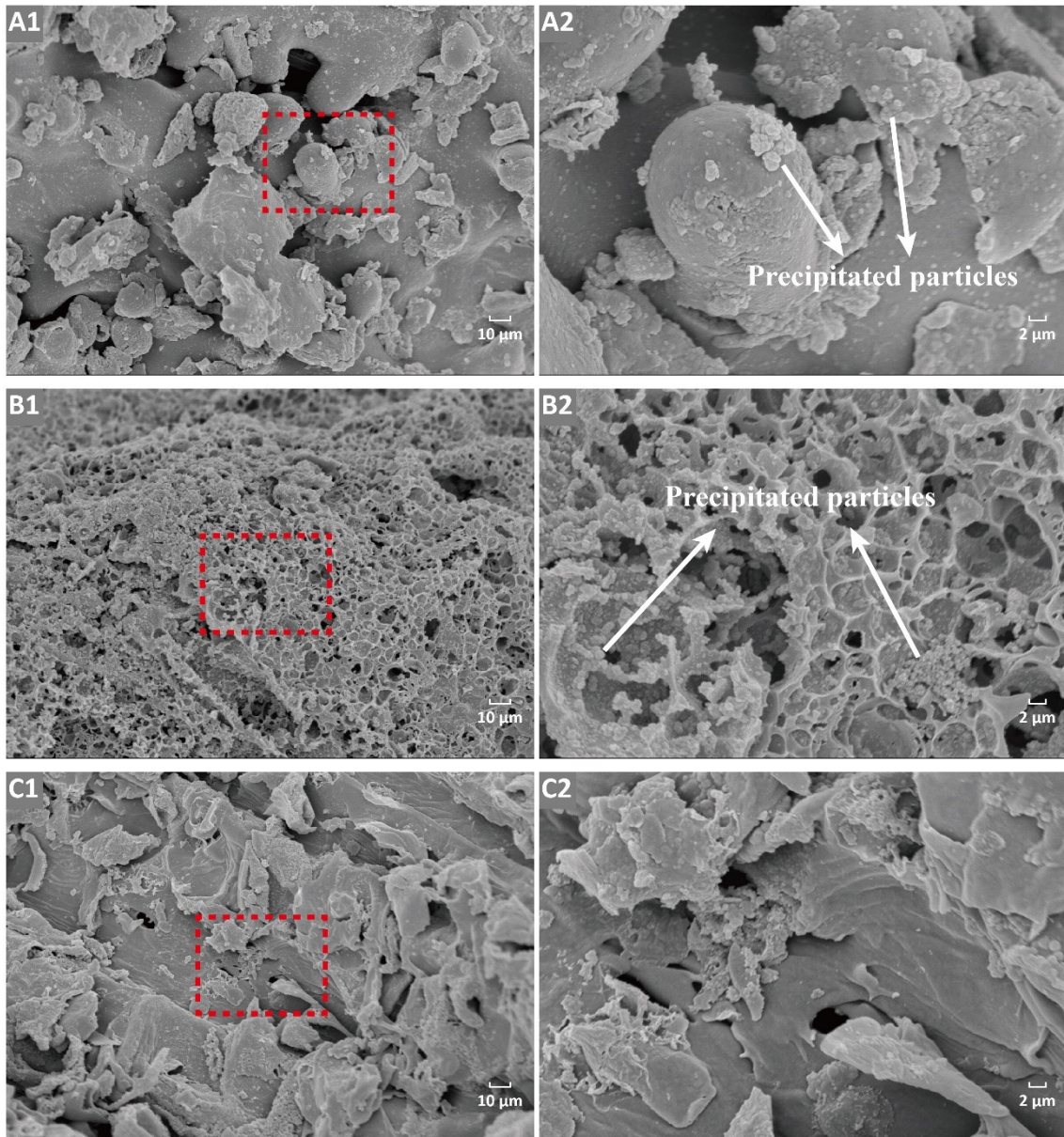


Figure S2 SEM spectra of biochars after adsorption. *5.0 k magnification times: A1 of BC, B1 of Pre-BC, C1 of Post-BC; *20.0 k magnification times: A2 of BC, B2 of Pre-BC, C2 of Post-BC

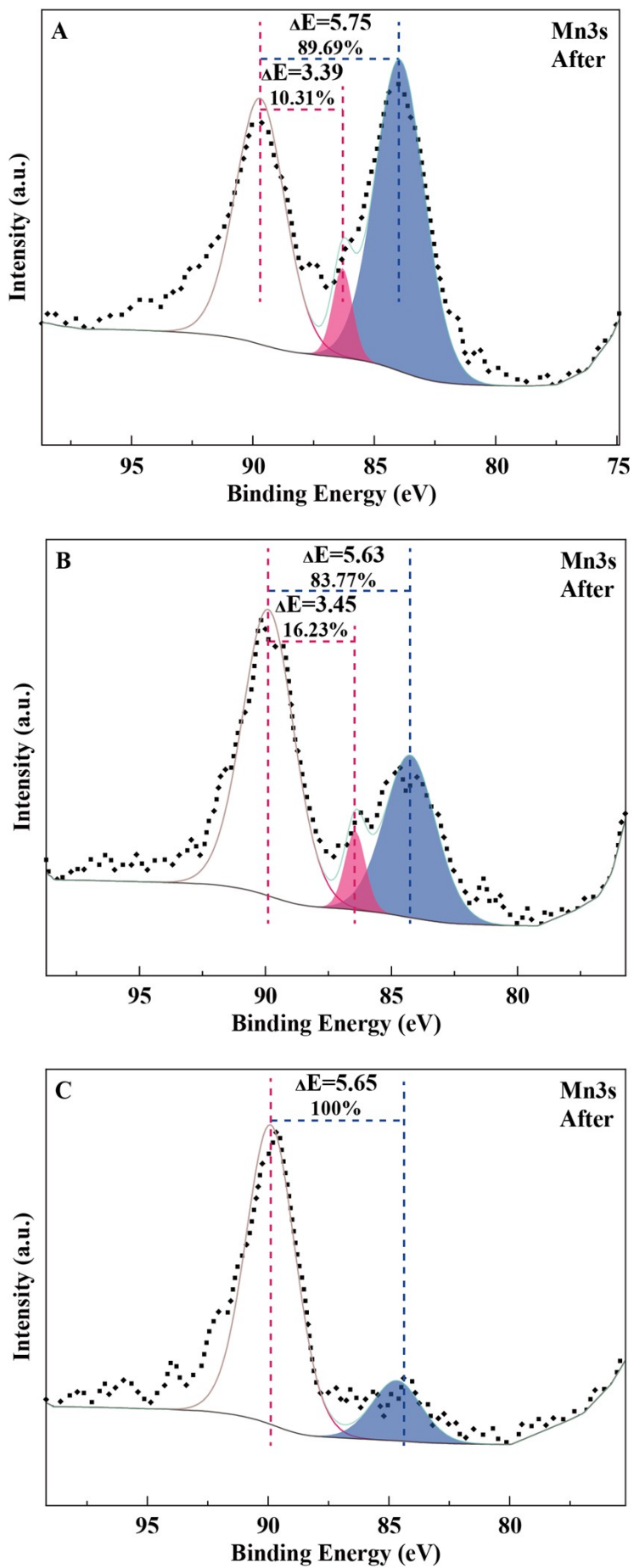


Figure S3 XPS refined scan spectra of Mn3s after adsorption. A: BC, B: Pre-BC, C: Post-BC

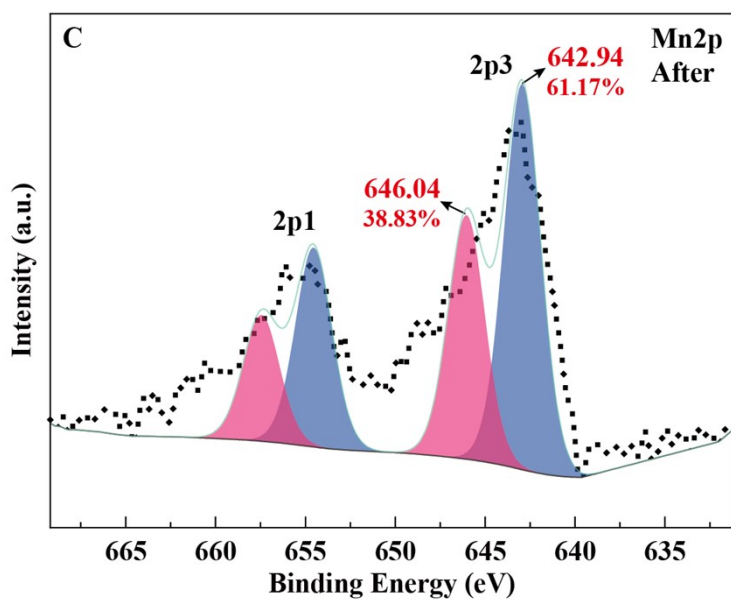
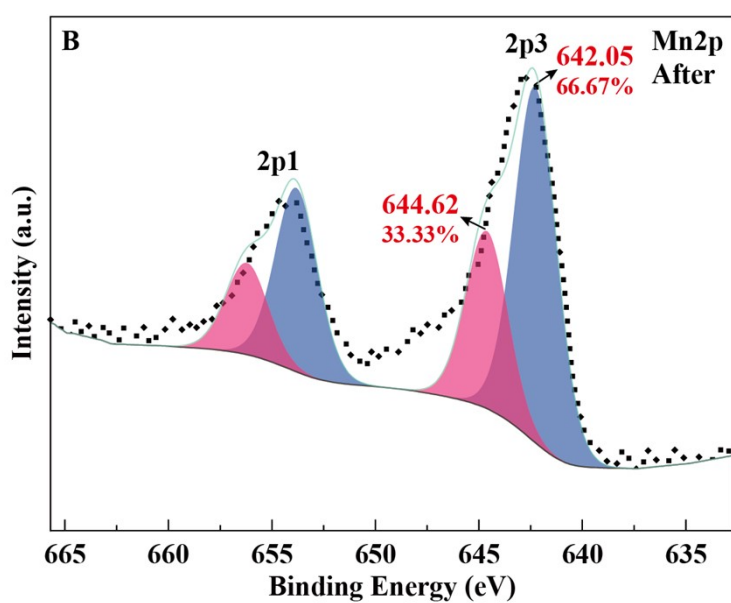
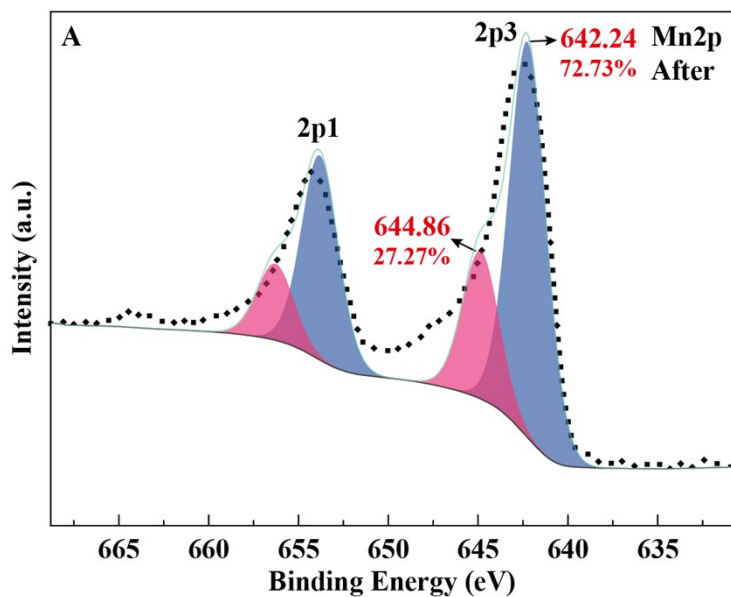


Figure S4 XPS refined scan spectra of Mn2p after adsorption. A: BC, B: Pre-BC, C: Post-BC.

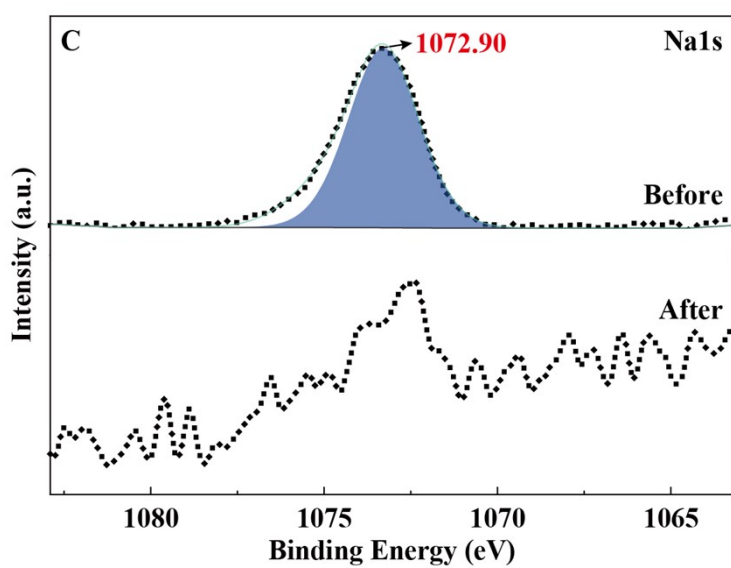
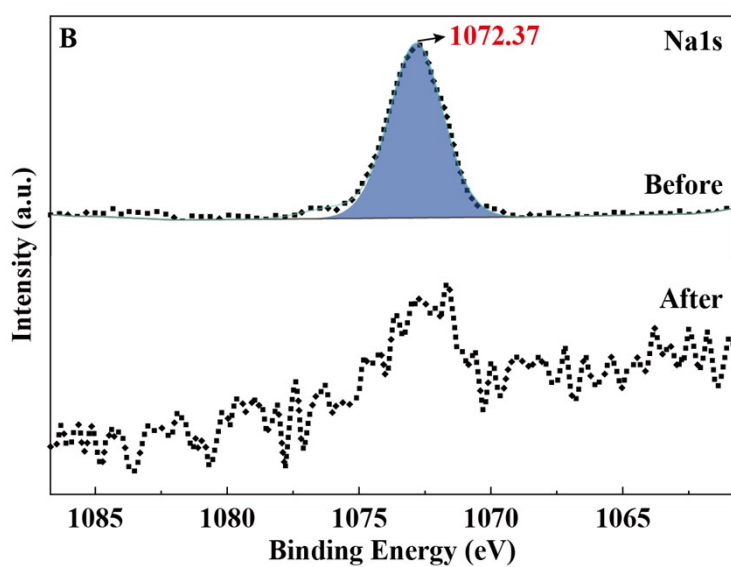
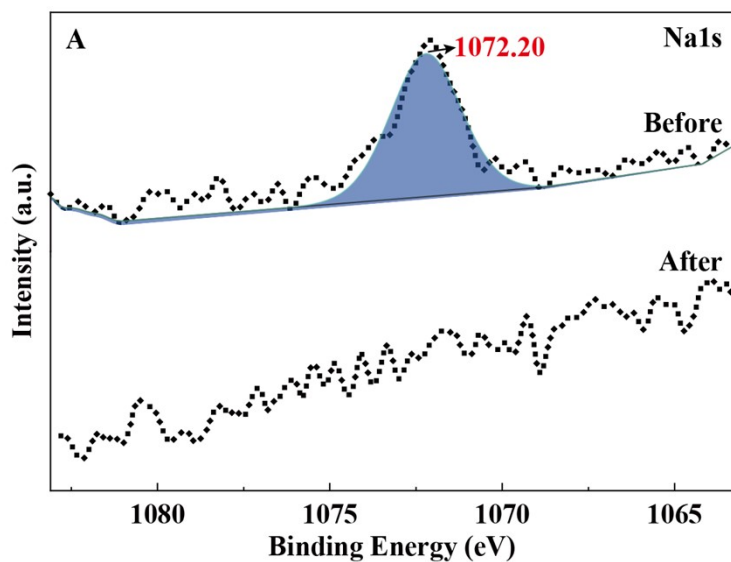


Figure S5 XPS refined scan spectra of Na1s before and after adsorption. A: BC, B: Pre-BC, C: Post-BC

Table S1 Variation of pH before and after adsorption of demineralized biochars

	Demineralized BC	Demineralized Pre-BC	Demineralized Post-BC
Before	6.80±0.02	6.80±0.02	6.80±0.02
After	6.72±0.03	6.13±0.01	6.44±0.03