

Supporting information

Facile Synthesis of Diatomite/ β -Cyclodextrin Composite and Application for the Adsorption of Diphenolic Acid from Wastewater

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Table S1. List of relevant abbreviations in the literature

Abbreviation	Significance
DPA	Diphenolic acid
DA	Diatomite
β -CD	β -cyclodextrin
DA/ β -CD	diatomite/ β -cyclodextrin composite
Ts- β -CD	P-toluenesulfonyl- β -cyclodextrin
EDCs	Endocrine-disrupting compounds
PI	Phenol
LA	Levulinic acid
ECH	Epichlorohydrin
PTSC	P-toluene sulfonyl chloride

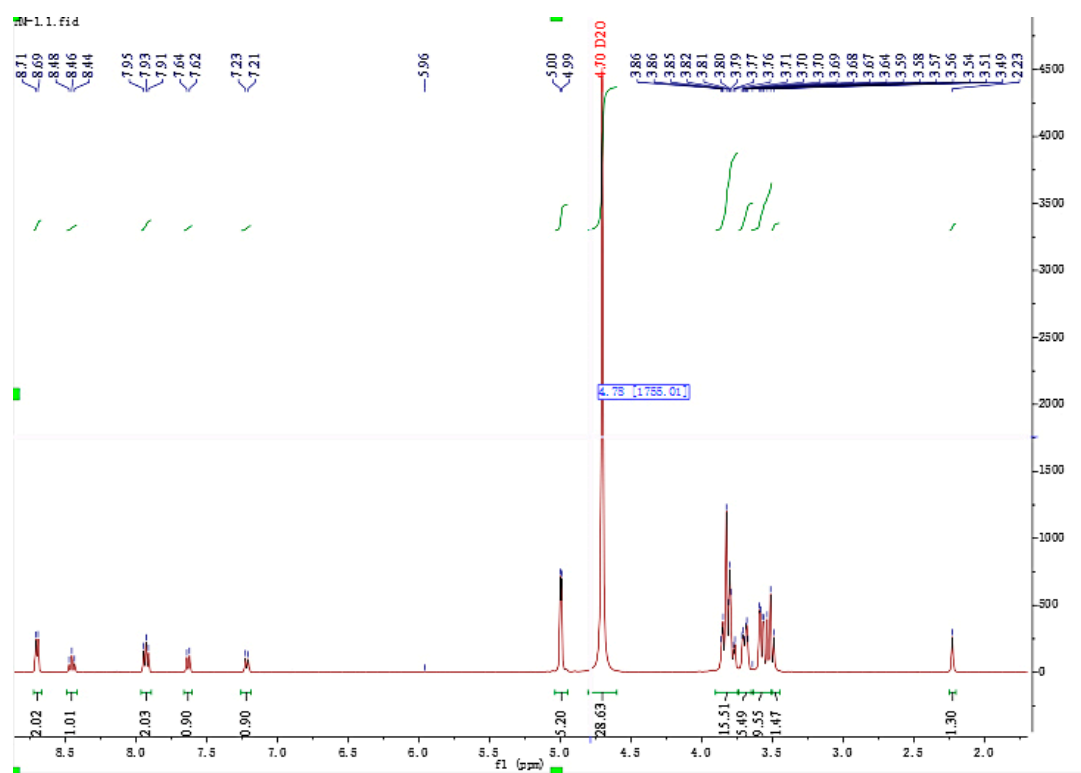


Figure S1. ^1H NMR spectrum of Ts- β -CD

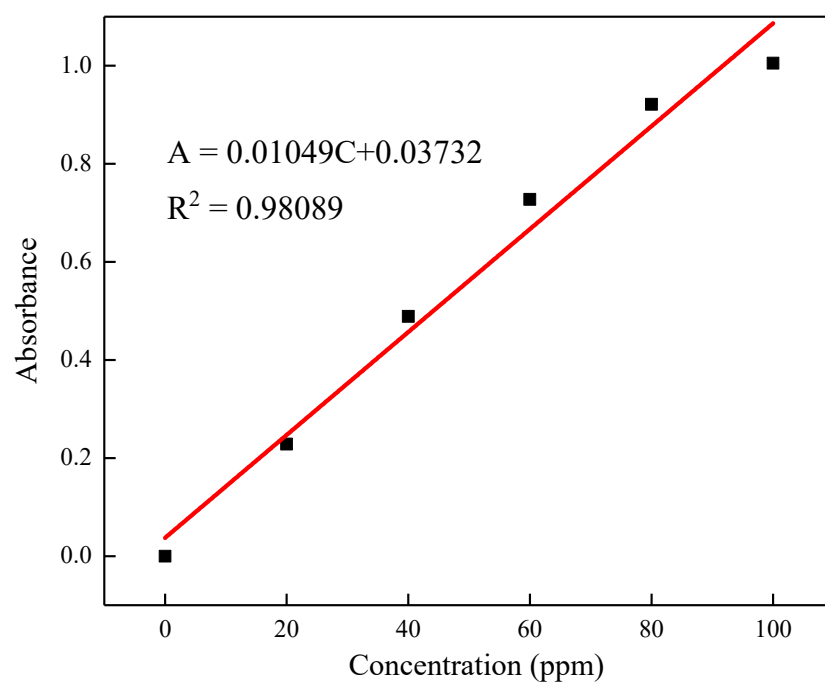


Figure S2. Standard curve of DPA

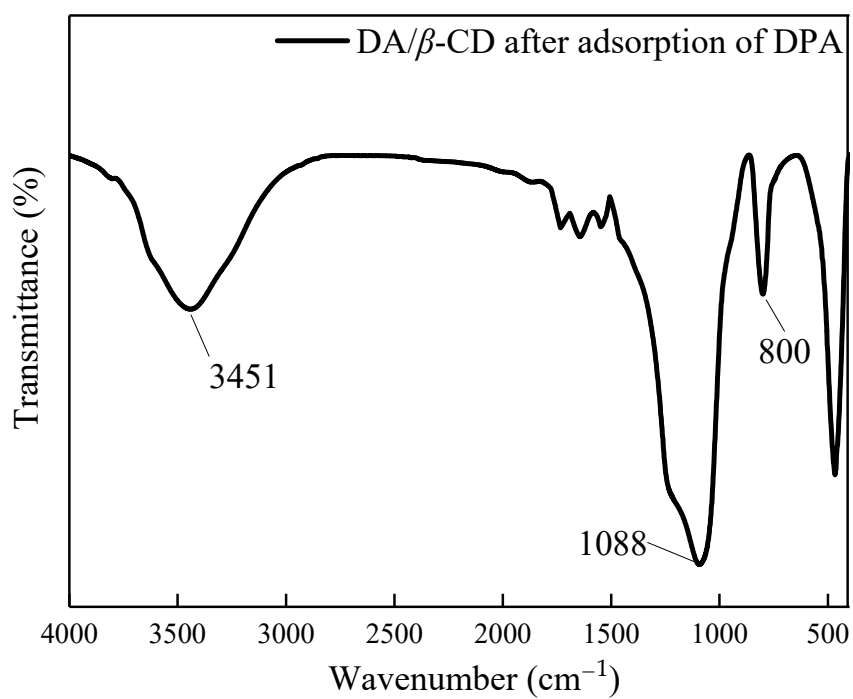


Figure S3. FT-IR spectra of DA/ β -CD after adsorption of DPA

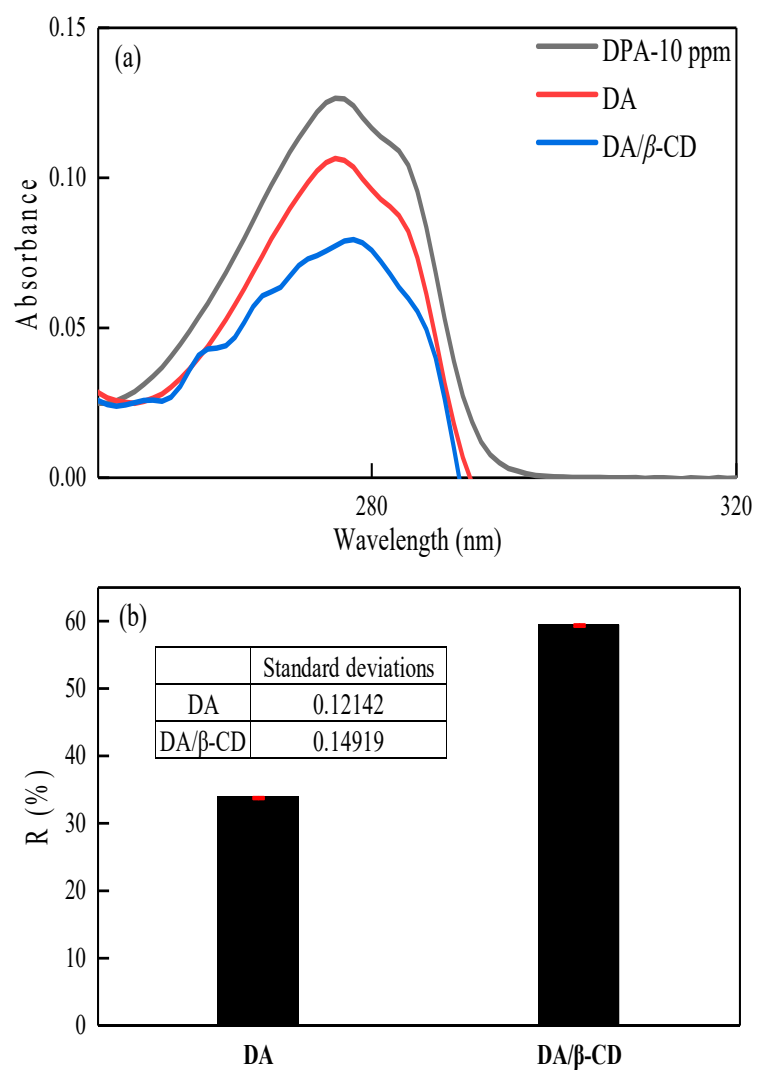


Figure S4. (a) UV-vis absorption spectrum of DPA after adsorbed by DA and DA/β-CD, (b) adsorption rates of DPA (10 ppm). 0.2 g adsorbent in 50 mL of DPA solution (10 ppm) at room temperature.

Table S2. Comparison of Existing DPA Removal Methods

Methods	Features	References
Photocatalysis	No pollution, but high catalyst cost	[13–15]
Ozone Oxidation	High cost and low O ₃ utilization	[16]
Ferrate Oxidation	Removal of bisphenol-based contaminants from aqueous solutions has limitations and may cause secondary pollution	[17]
Fenton and Fenton-like oxidation	It can accelerate the degradation efficiency, but it is difficult to recycle and reuse, and the reaction conditions are difficult to control	[18,19]
Adsorption	high efficiency, low energy consumption, simple process, and low cost, recyclable	[20–25]