Supporting information

Fabrication of photo-enzyme coupled catalyst with the desired electron transport channel for high-efficiency synergic degrading bisphenol A in water

Xinnan Ma[a], Jiacong Wu[a], Juan Han[b], Lei Wang[a], Chunmei Li [a,*], Yun Wang[a,*]

[a]School of Chemistry and Chemical Engineering, Jiangsu University, Zhenjiang, Jiangsu Province 212013, China

[b]School of Food and Biological Engineering, Jiangsu University, Zhenjiang, Jiangsu Province 212 013, China

* Corresponding author. Tel.: +86 0511 88790683; Fax.: +86 0511 88791800;

E-mail: lichun_mei_happy@126.com (Chunmei Li), yunwang@ujs.edu.cn (Yun Wang)

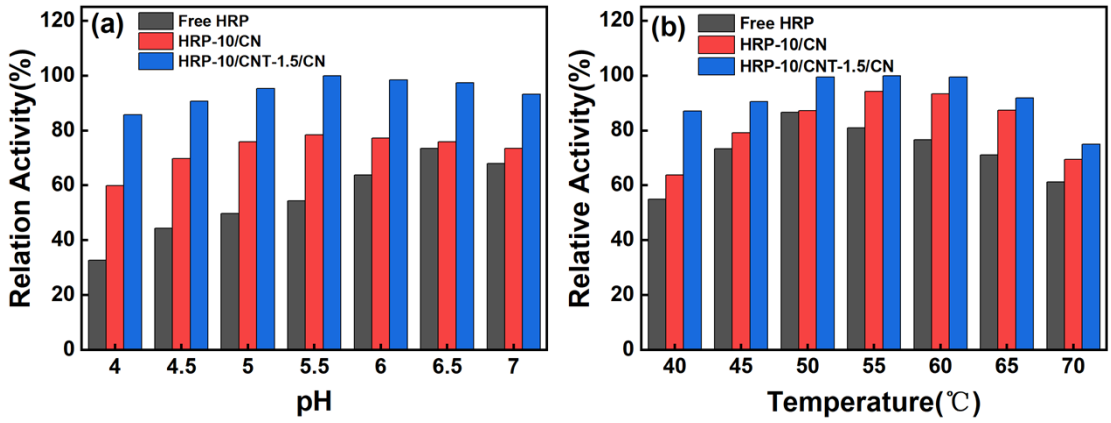

Fig. S1 Effects of (a) pH and (b) temperature on catalytic activity of the samples.

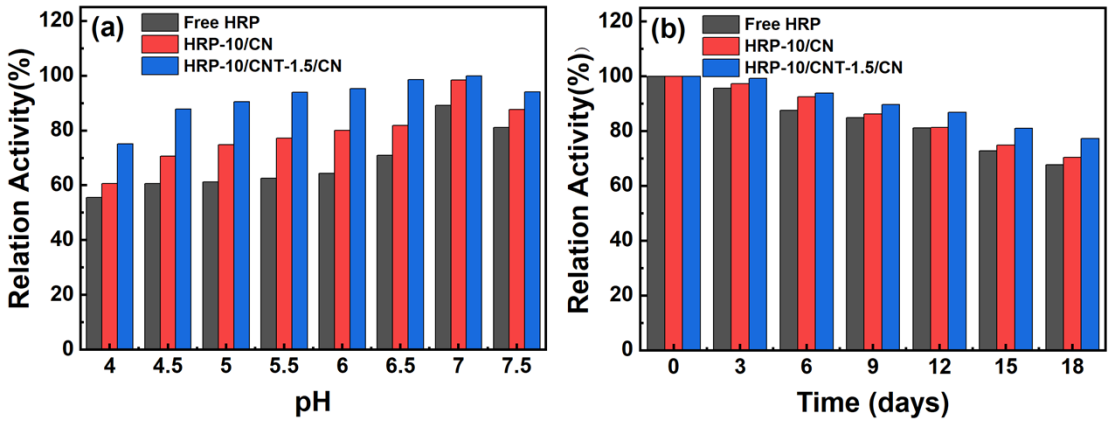

Fig. S2 (a) pH stability and (b) storage stability of free HRP, HRP-10/CN and HRP-10/CNT-1.5/CN.

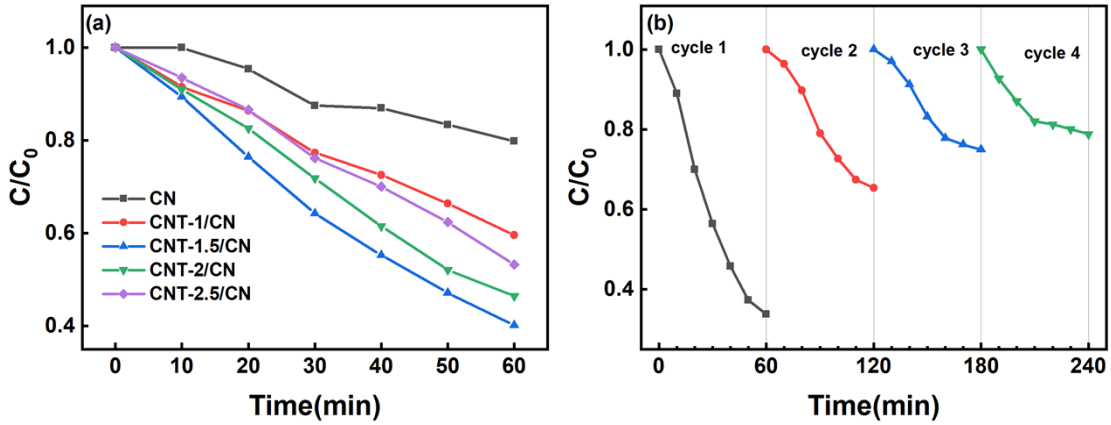

Fig. S3 (a)Degradation dynamic curves of CNT-X/CN with different CNT and (b) Cycle degradation dynamic curves of BPA over HRP-10/CN.

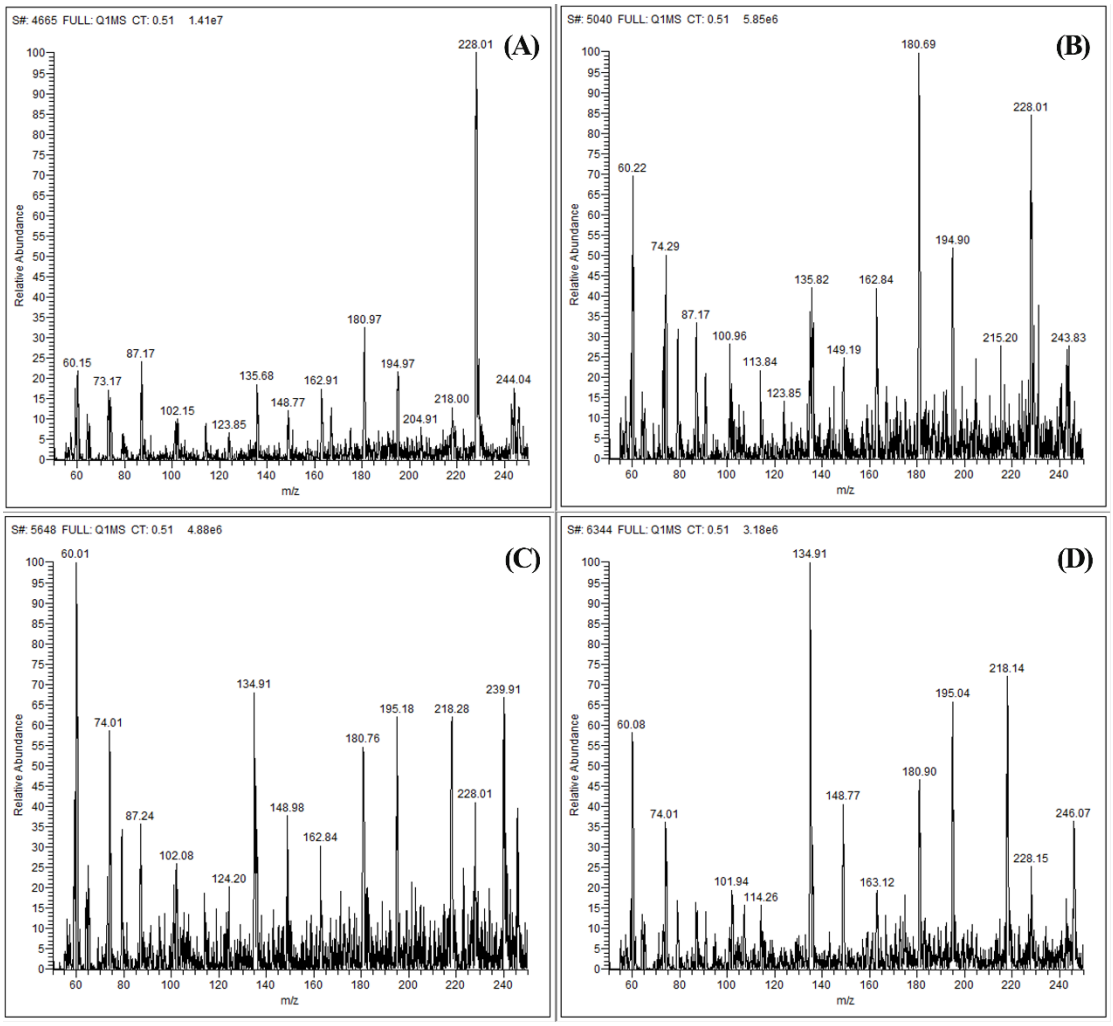

Fig. S4 MS of BPA at degradation time of (a) 0 min, (b) 20 min, 40 min and 60 min over HRP-10/CNT-1.5/CN sample.

Table. S1 BET surface area, and pore size data of samples

Sample	S_{BET} (m^2 g^{-1})	Average pore volume (cm^3 g^{-1})	Average pore size (nm)
CN	81.0697	0.281029	13.5039
CNT-1.5/CN	82.3503	0.352053	18.0646
HRP-10/CNT-1.5/CN	81.9249	0.343211	18.1439

Table. S2 Kinetic constants of free HRP, HRP-10/CN and HRP-10/CNT-1.5/CN

Sample	V_m(M min^{-1})	K_m(M)	K_{cat}(s^{-1})	K_{cat} /K_m($s^{-1}M^{-1}$)
free HRP	0.558	3.75	0.0326	0.00871
HRP-10/CN	0.972	5.36	0.0568	0.0106
HRP-10/CNT-1.5/CN	0.961	5.10	0.0561	0.0110

Table. S3 The pseudo-first order rate constants of BPA degradation by various photocatalysts.

Samples	k (min^{-1})	R^2
CN	0.00365	0.95009
CNT-1.5/CN	0.0153	0.99423
HRP-10/CNT-1.5/CN	0.0311	0.97839