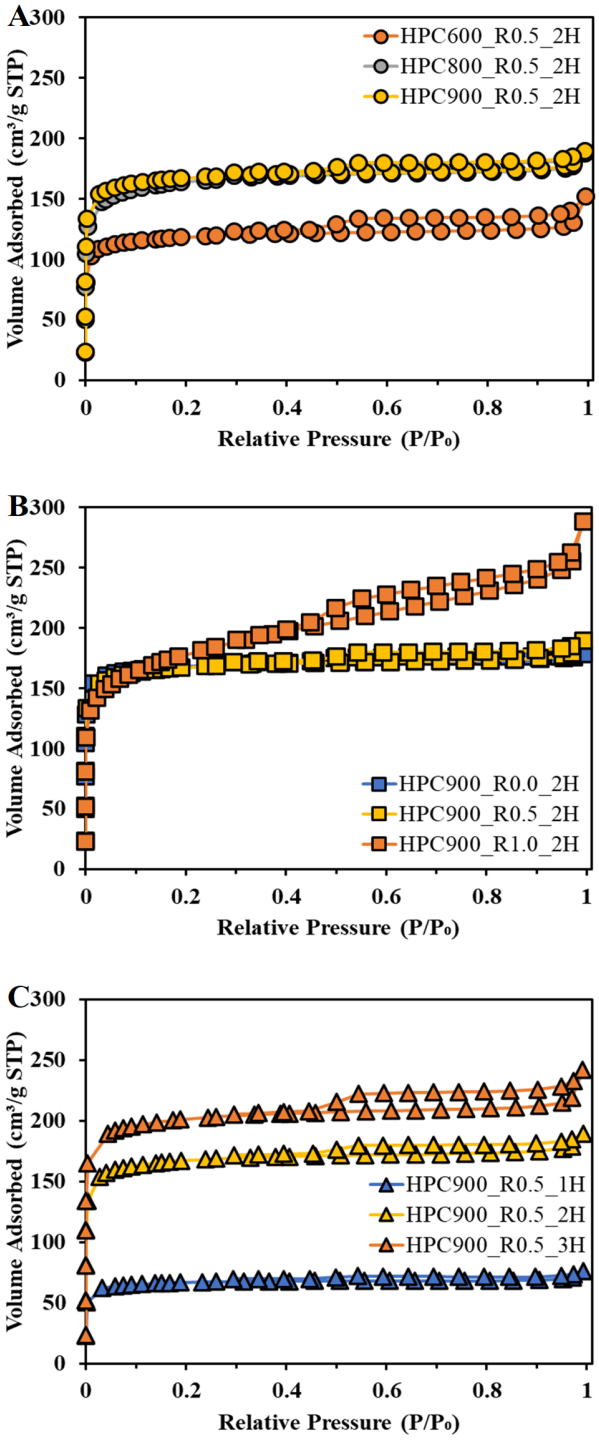

Figure S1. N_2 adsorption–desorption isotherms of HPCs by (A) temperature effect, (B) ratio effect, (C) activation time effect.

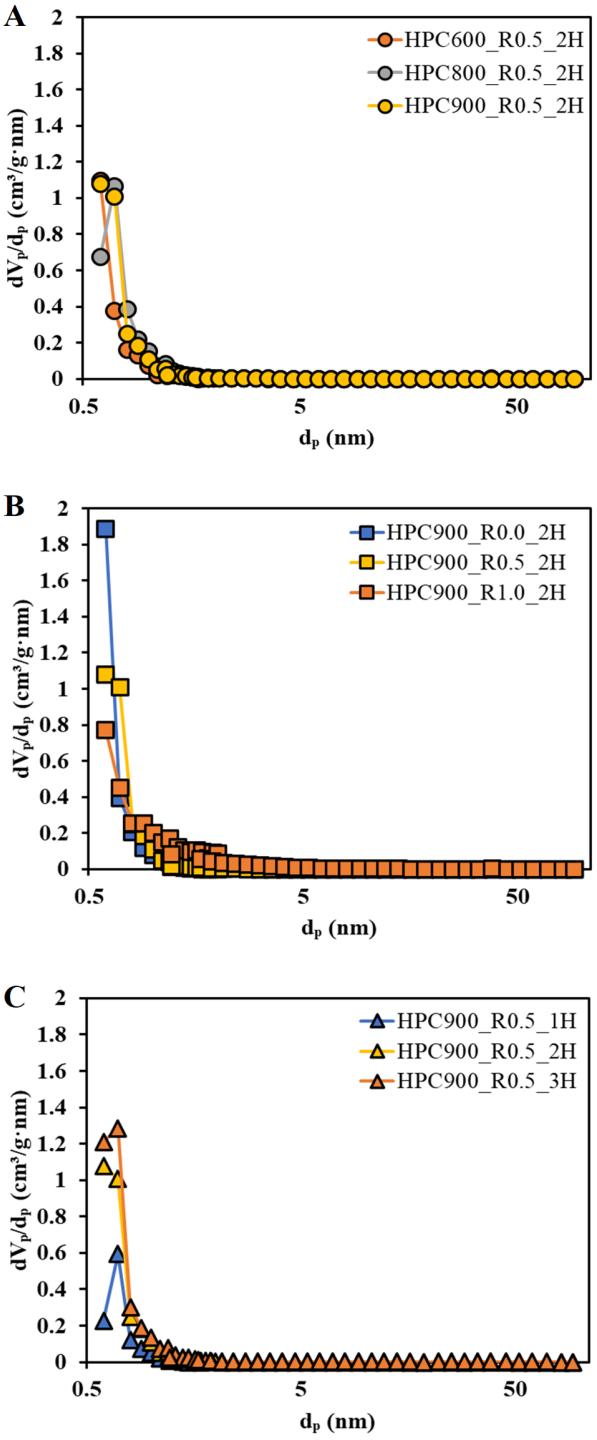

Figure S2. Pore size distribution of HPCs by (A) temperature effect, (B) ratio effect, (C) activation time effect.

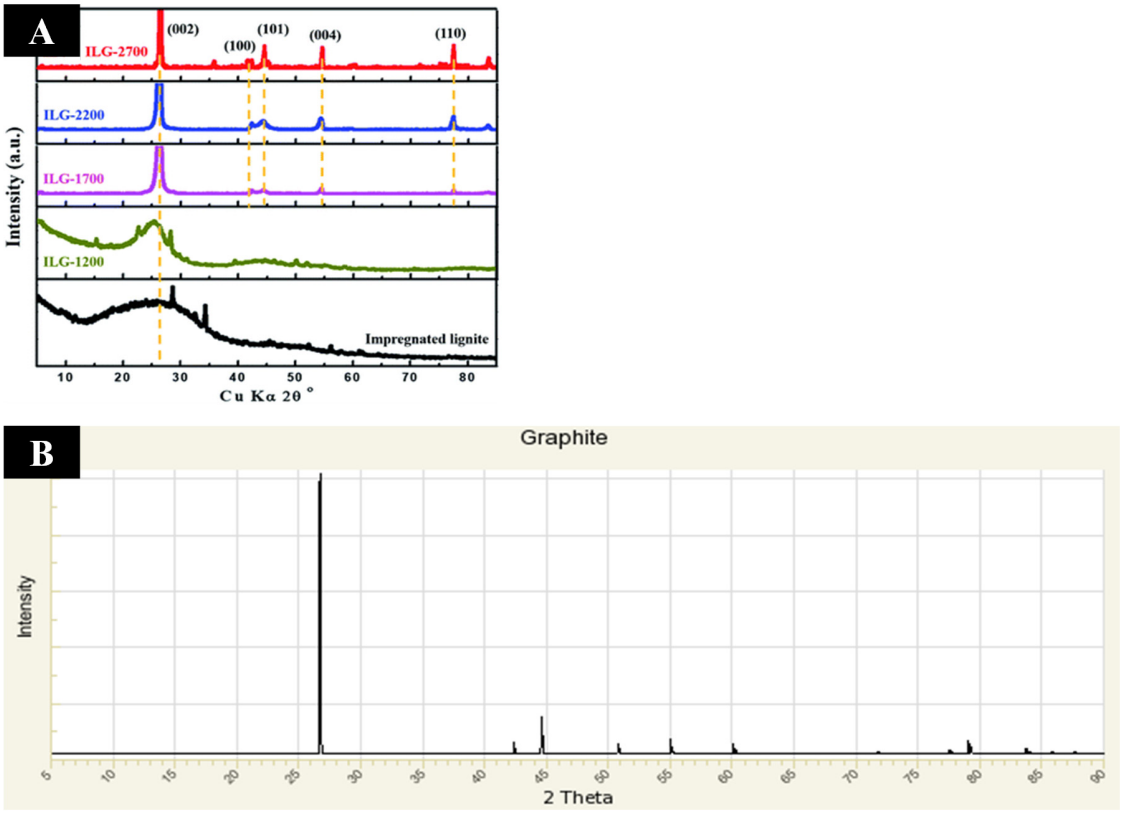

Figure S3. XRD patterns of graphitic structure in (A) Yang et al. 2019 [1] and in (B) https://rruff.info/Graphite/R090047s (accessed on Aug. 06, 2023).

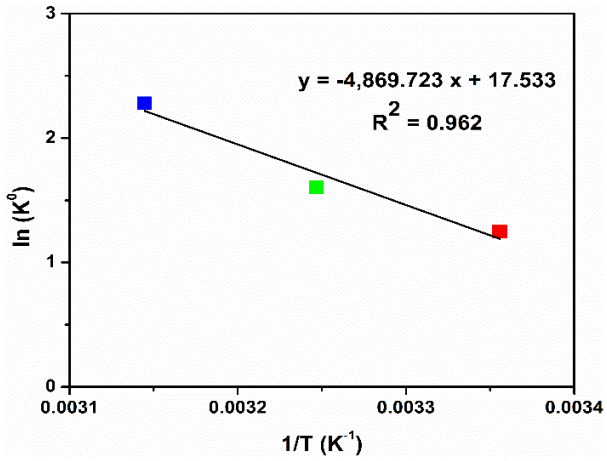

Figure S4. ln (K°) vs. 1/T plot for HPC900_R1_2H.

Table S1. Comparison of the maximum OTC adsorption performance of different adsorbents.

No.	Adsorbent	Maximum Adsorption Capacity (mg/g)	Reference
1	$g\text{-}C_3N_4$	11.30	[2]
2	$LaFeO_3/g\text{-}C_3N_4$	93.52	[2]
3	$LaFeO_3$	74.12	[2]
4	Coconut shell biochar	71.93	[3]
5	Pickling biochar	113.37	[3]
6	Corn straw biochar	47.89	[4]
7	Vitamin B6-coated corn straw biochar	52.79	[4]
8	$Ni_3S_4/Ag_2S/TiO_2$/CA aerogel	29.57	[5]
9	Poplar leaf	59.50	[6]
10	Poplar leaf/$KHCO_3$	141.00	[6]
11	$S\text{-}TiO_2/WS_2$/alginate beads	27.69	[7]
12	Wheat flour/$NaHCO_3$	87.18	This work

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