Supporting Information

Facile synthesis of hierarchical N-doped hollow porous carbon whisker with ultrahigh surface area via synergistic inner-outer activation for casein hydrolysate adsorption

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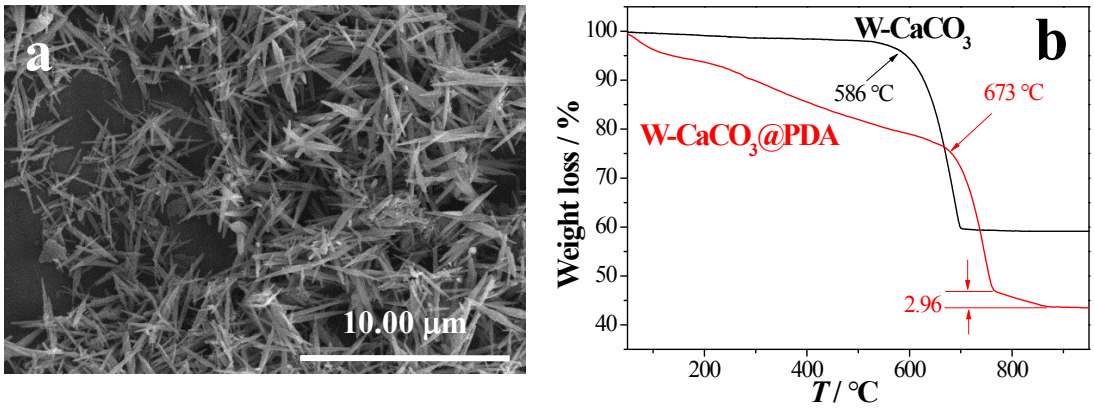

Figure S1. SEM images of (a) W-$CaCO_3$ whisker particles; (b) TGA curves of the W-$CaCO_3$ and W-$CaCO_3$@PDA.

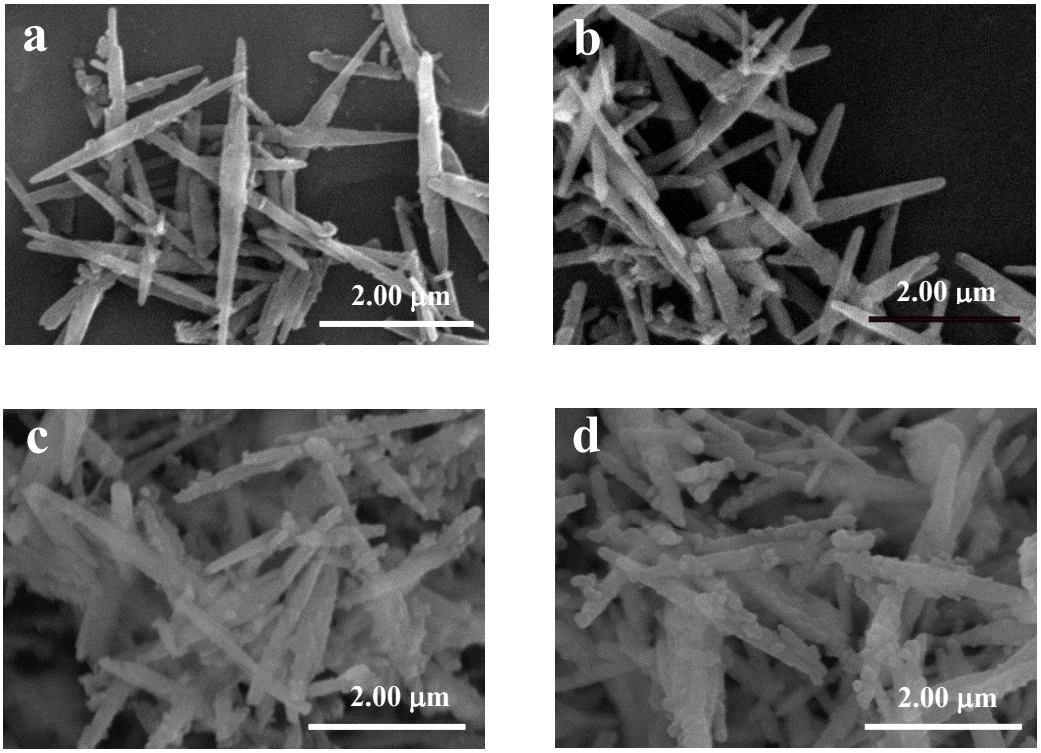

Figure S2. SEM images of W-$CaCO_3$@PDA obtained with different concentrations of dopamine hydrochloride solution: (a) 2 g·L^{-1}, (b) 4 g·L^{-1}, (c) 5 g·L^{-1}, (d) 7 g·L^{-1}.

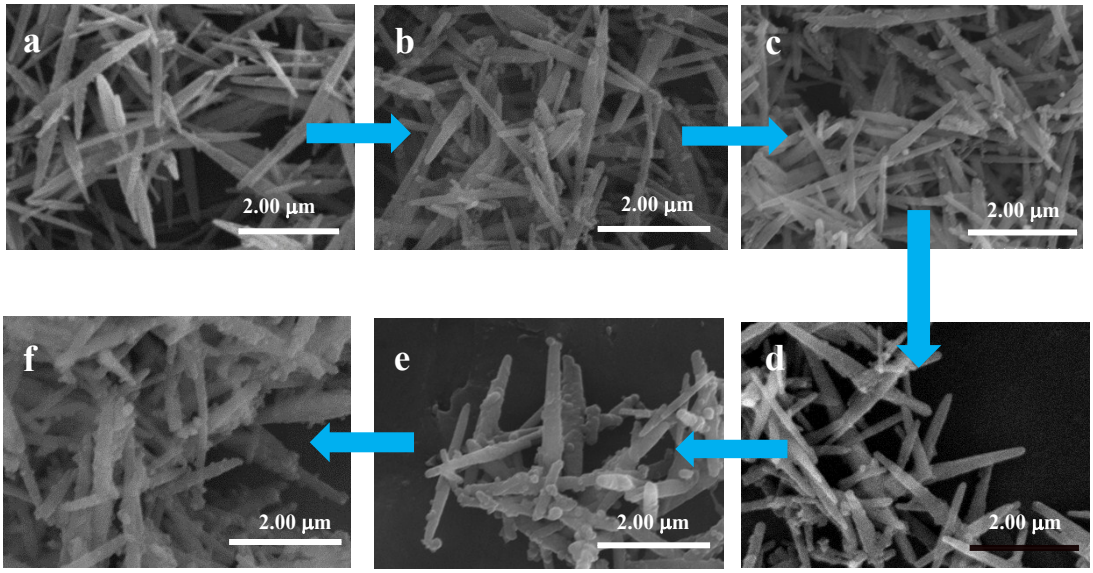

Figure S3. SEM images of W-$CaCO_3$ particles and W-$CaCO_3$@PDA synthesized at different reaction times under 4 g·L^{-1} of dopamine hydrochloride solution: (a) 0 h; (b) 2 h; (c) 10 h; (d) 20 h; (e) 25 h; (f) 30 h.

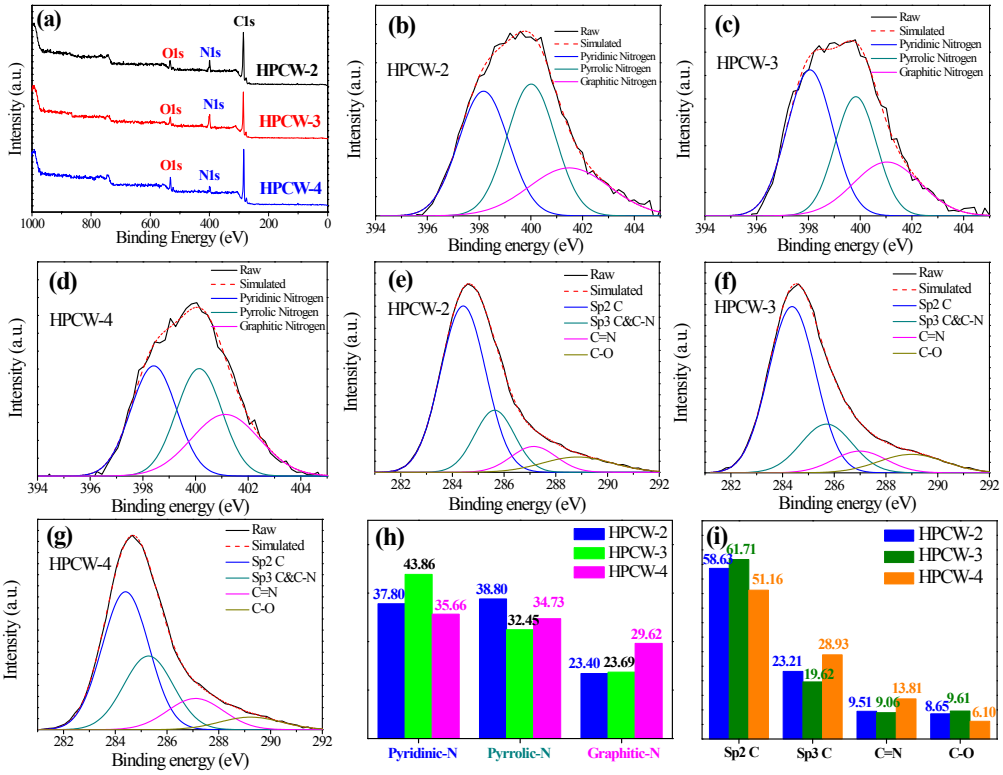

Figure S4. (a-g) XPS spectra, (h) N species (N 1s XPS) and (i) C species (C 1s XPS) contents of HPCW-2, HPCW-3 and HPCW-4.

Table S1. Pore structure parameters of HPCWs materials**.**

Sample	Langmuir ($m^2 \cdot g^{-1}$)	BET ($m^2 \cdot g^{-1}$)	V_t ($cm^3 \cdot g^{-1}$)	V_m ($cm^3 \cdot g^{-1}$)	S_m ($m^2 \cdot g^{-1}$)	S_m/S_t (%)
HPCW-1	780.2	638.4	1.104	0.173	382.6	59.93
HPCW-2	3648.8	3007.0	1.669	0.886	2255.9	75.02
HPCW-3	3354.3	2802.0	2.631	0.700	1754.3	62.61
HPCW-4	2843.4	2372.8	1.125	0.796	2044.7	86.17
HPCW-5	843.9	707.4	0.641	0.246	589.5	83.33
HPCW-1-800	623.6	531.0	0.908	0.136	313.5	59.04
HPCW-1-900	413.2	290.6	0.880	0.044	84.2	28.97

Table S2. Comparison of Adsorption quantity of some porous materials for proteins and peptides.

Sample	AC[1]	P(GMA–DVB)[2]	OMC[3]
Adsorption quantity ($mg \cdot g^{-1}$)	**329**	**51.6**	**300**
Surface areas (BET, $m^2 \cdot g^{-1}$)	1408	312	639
Adsorbate	Ile-Trp	BSA	BSA

REFERENCES

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