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Supporting Information

Inorganic salt-induced synthesis of lignin derived hierarchical porous carbon with self-embedded quantum dots and ultrahigh mesoporosity for supercapacitors

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The supporting information included 10 pages, 3 Tables and 6 Figures.

20 **Table S1**

21 Textural properties and elemental analysis of LHPC-Li, LHPC-K and LHPC-Zn.

Sample	S_{BET}	V_t	V_{mic}	V_{mes}	V_{mic}/V_t	V_{mes}/V_t	C	O	S
	($\text{m}^2 \text{g}^{-1}$)	($\text{cm}^3 \text{g}^{-1}$)	($\text{cm}^3 \text{g}^{-1}$)	($\text{cm}^3 \text{g}^{-1}$)	(%)	(%)	(wt%)	(wt%)	(wt%)
LHPC-Li	902.8	0.8632	0.0586	0.4046	12.65	87.35	73.02	25.91	0.86
LHPC-K	904.3	0.8741	0.0563	0.2178	20.54	79.46	74.59	24.17	0.54
LHPC-Zn	933.6	1.016	0.1197	0.8965	10.72	88.23	71.95	22.89	4.74

22 S_{BET} is the specific surface area obtained from multipoint Brunauer-Emmett-Teller

23 (BET) plots.

24 V_t is the total pore volume determined at $P/P_0 = 0.99$.

25 V_{mic} and V_{mes} are the micropore and mesopore volume calculated by the t-plot method.

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28 **Table S2**

29 The Inorganic element content of LHPC-K-Zn measured by inductively coupled
30 plasma emission spectrometer (ICP-OES).

Element species (%)	Content (%)
K	0.0537
Zn	0.018
Cl	0.12

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33 **Table S3**

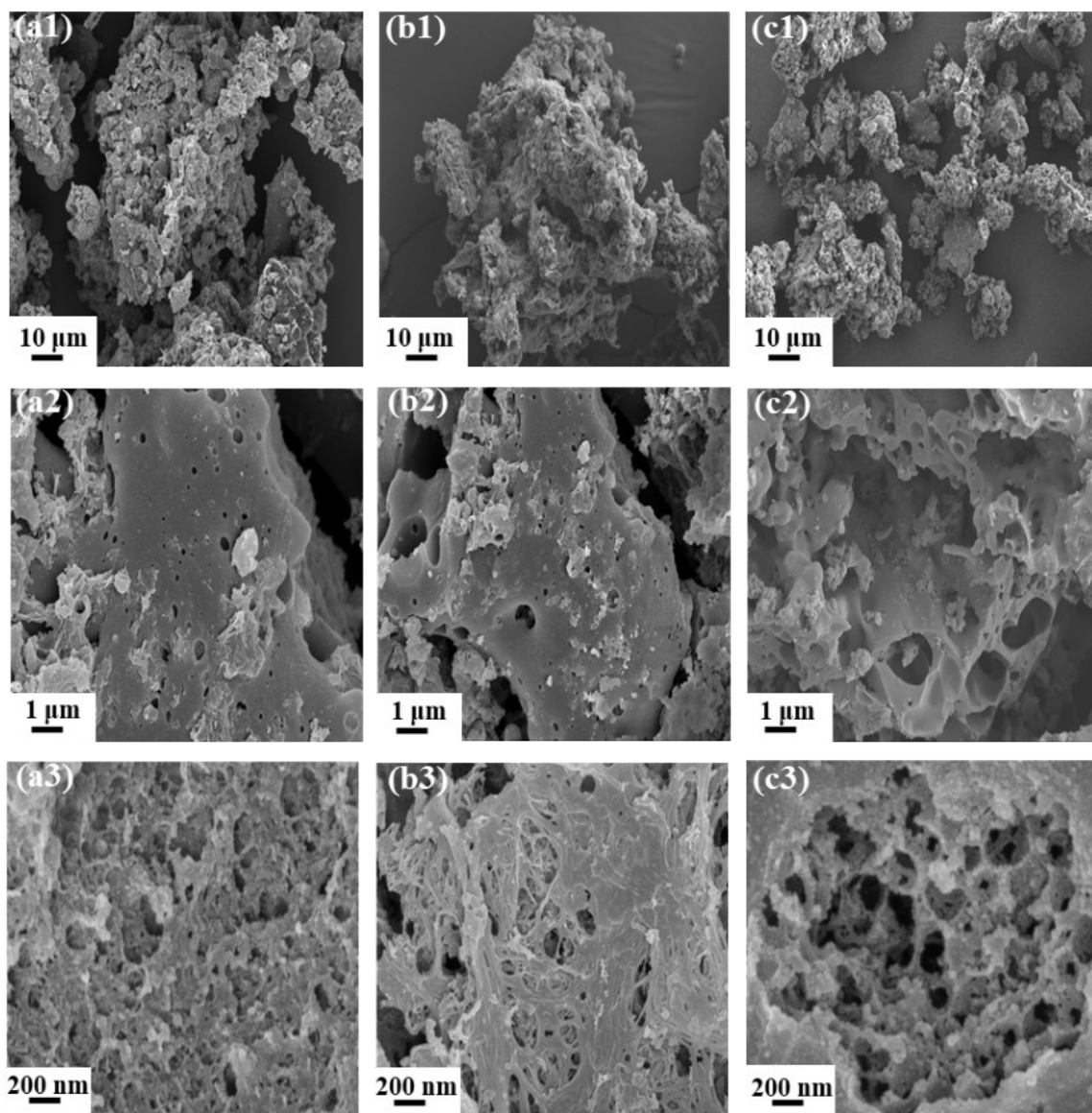
34 Relative concentrations of element species in LHPC, LHPC-Li-Zn and LHPC-K-Zn

35 by fitting XPS spectra.

Sample	LHPC	LHPC-Li-Zn	LHPC-K-Zn
O species (%)	Content (%)		
C=O	20.08	14.86	16.25
C-OH	35.61	32.63	26.59
C-O-C	26.48	28.66	33.50
O=C-OH	17.83	23.74	23.66

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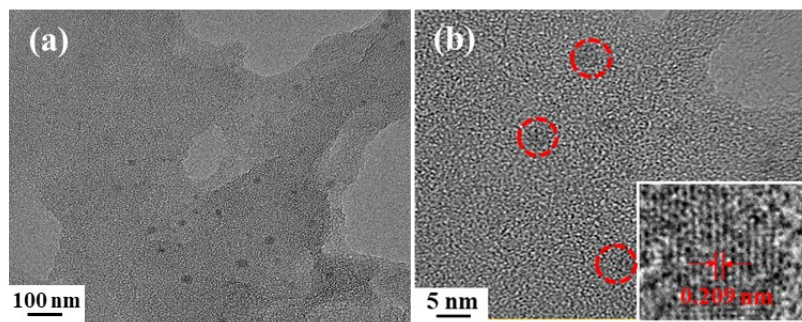
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40 **Fig. S1** SEM images of LHC-Li (a1), LHPC-Li (a2, a3), LHC-K (b1), LHPC-K (b2,

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b3), LHC-Zn (c1) and LHPC-Zn (c2, c3)

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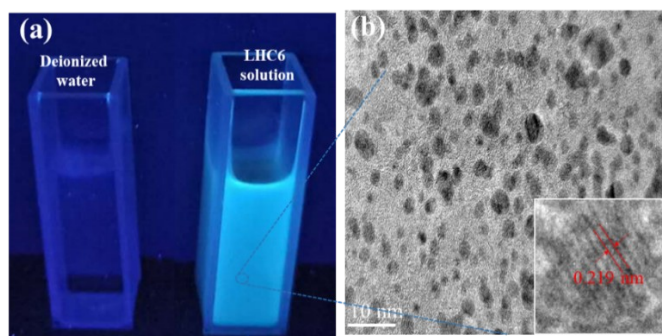


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Fig. S2 TEM images of LHPC-K-Zn

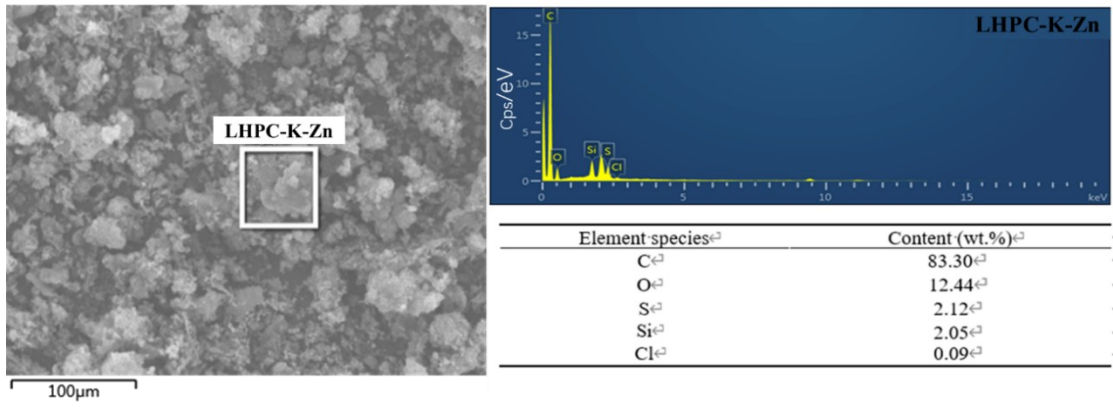


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Fig. S3 (a) The optical image and (b) TEM image of LHC-K-Zn solution

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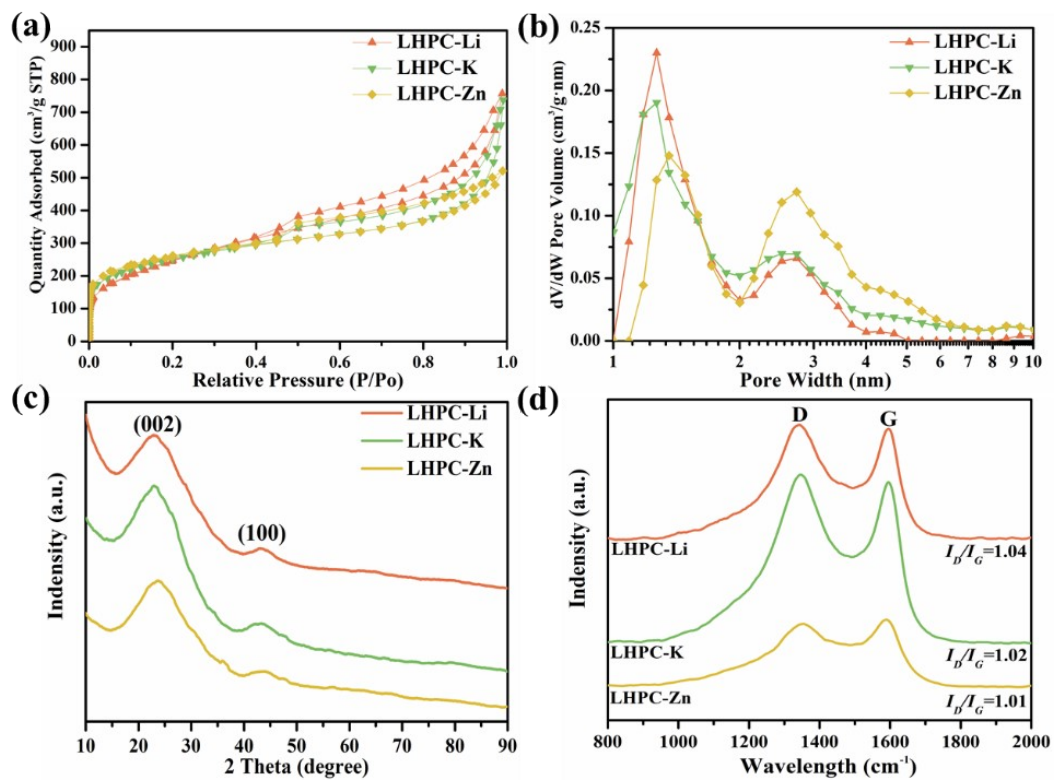


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Fig. S4 The energy-dispersive spectroscopy of LHPK-K-Zn

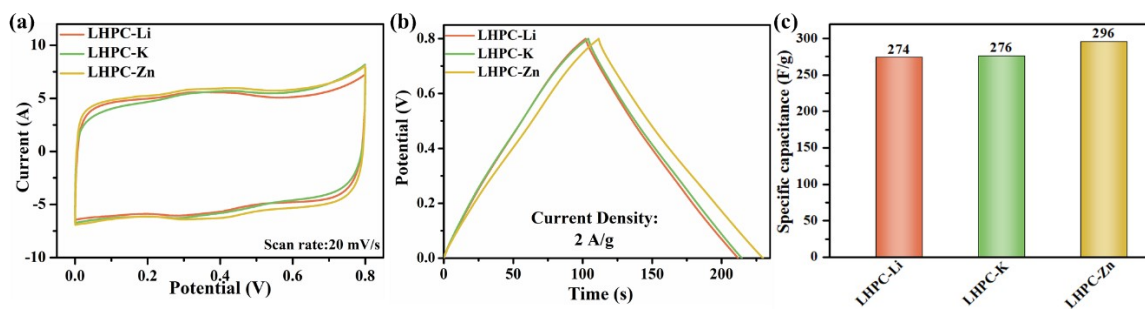
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53 **Fig. S5** N₂ adsorption-desorption isotherms (a), pore size distributions (b), wide-angle
 54 X-ray diffraction (XRD) patterns (c) and Raman spectra (d) of the LHPC-Li, LHPC-K
 55 and LHPC-Zn.

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58 **Fig. S6** CV curves (a), GCD plots (b), and specific capacitances (c) of the LHPC-Li,

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LHPC-K and LHPC-Zn in three-system