Supplementary Materials

From wasted polymers to N/O co-doped partially graphitic carbon with hierarchical porous architecture as a promising cathode for high performance Zn-ion hybrid supercapacitors

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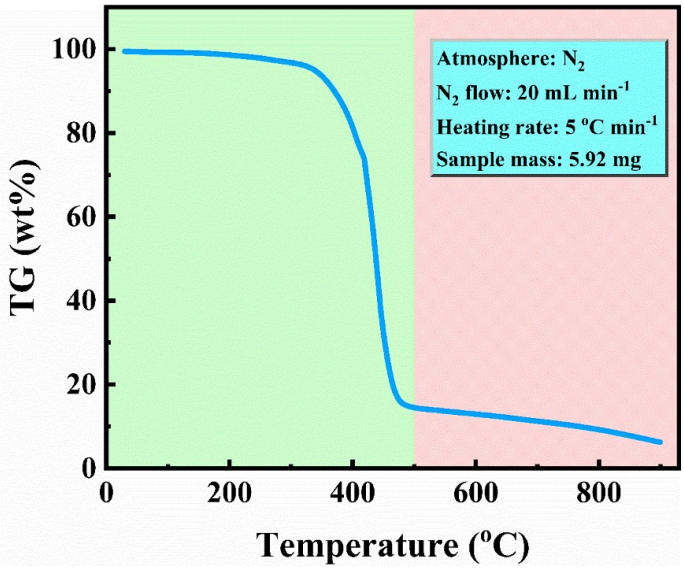

Figure S1. TG curve of disposable blue nitrile gloves.

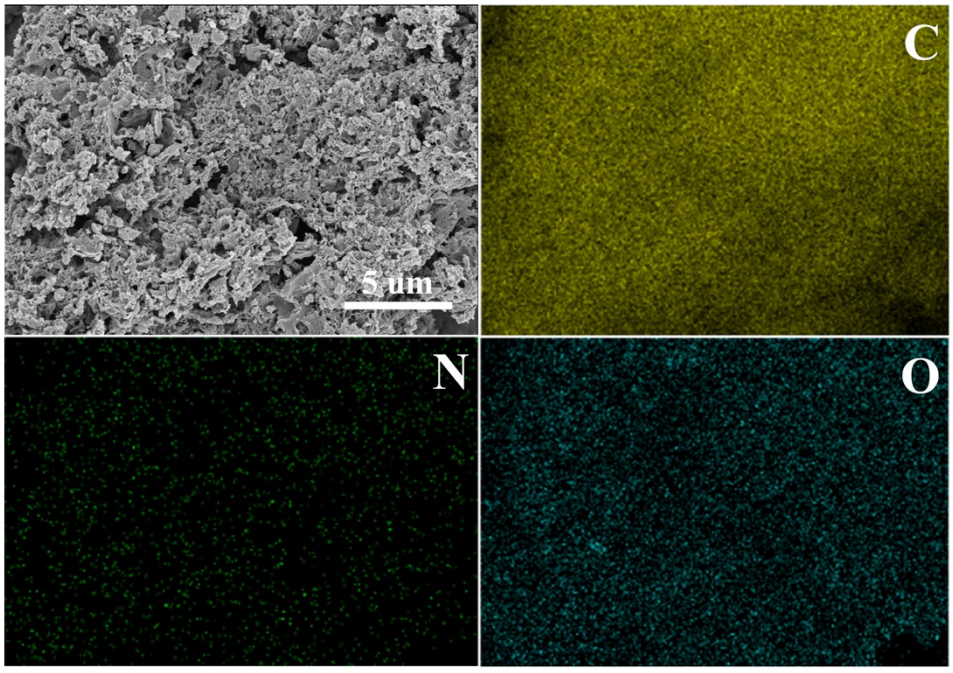

Figure S2. SEM image and the corresponding EDS mappings of C, N and O elements of NGCA material.

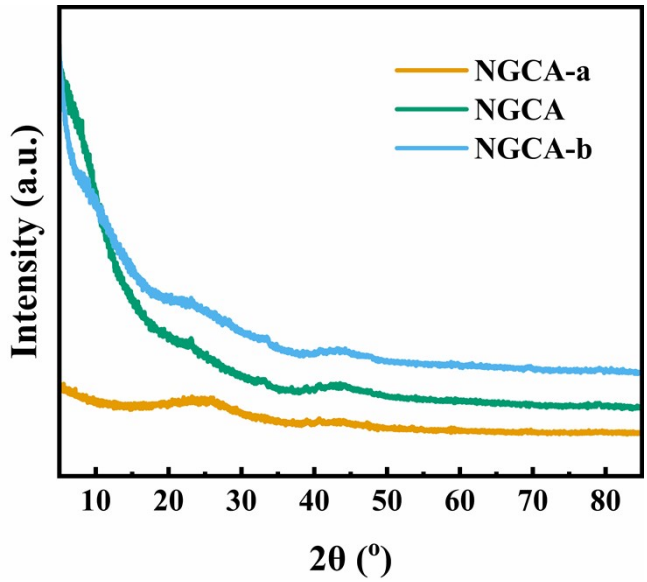

Figure S3. XRD patterns of as-fabricated materials.

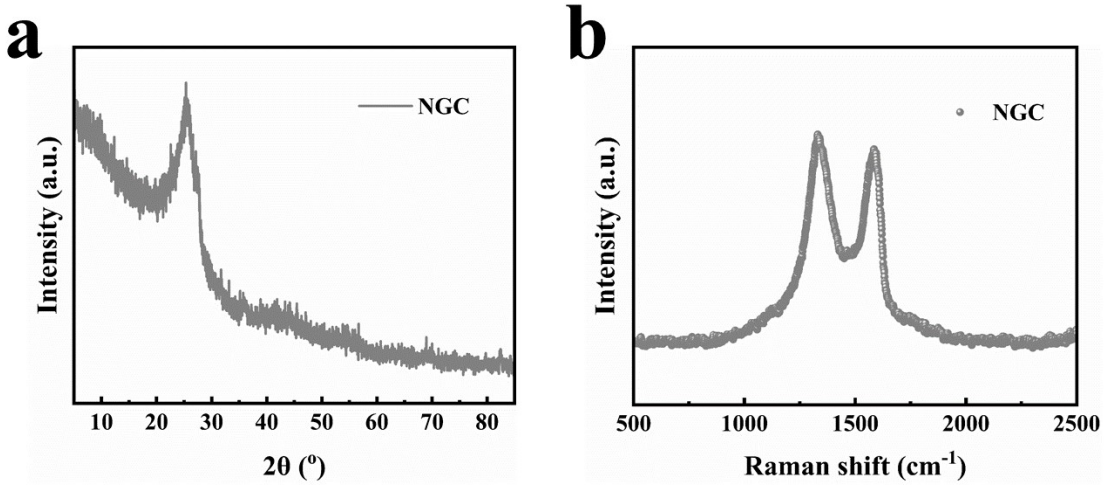

Figure S4. (a) XRD pattern and (b) Raman spectrum of NGC sample.

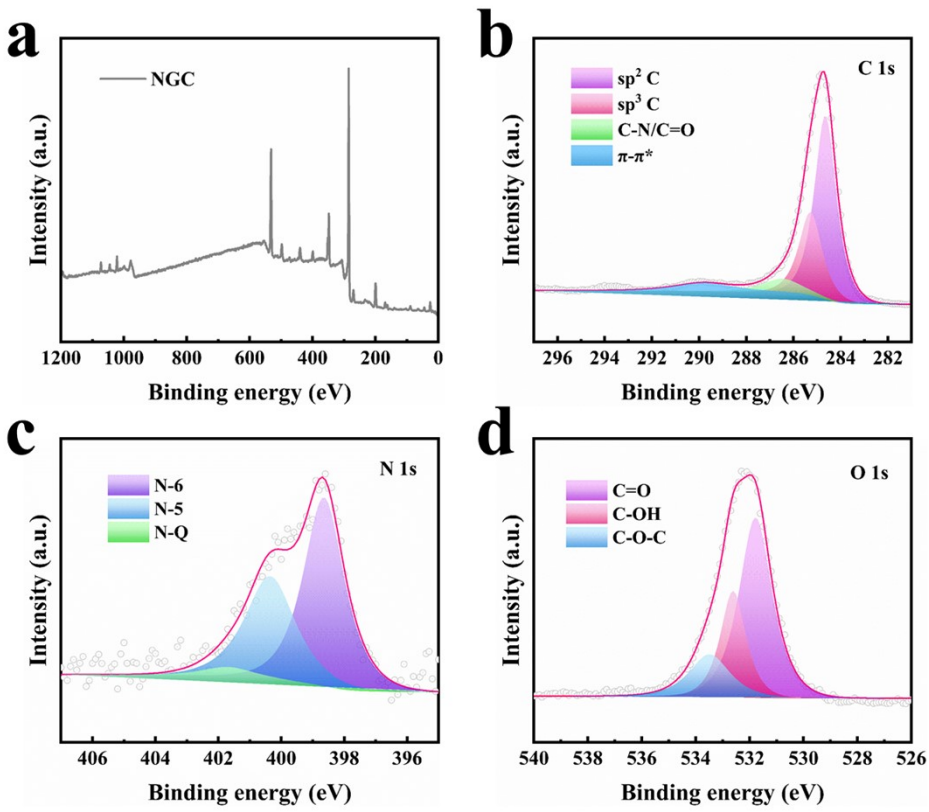

Figure S5. (a) XPS survey spectrum, (b) High resolution C 1s XPS spectrum, (e) High resolution N 1s XPS spectrum and (f) High resolution O 1s XPS spectrum of as-produced NGC sample.

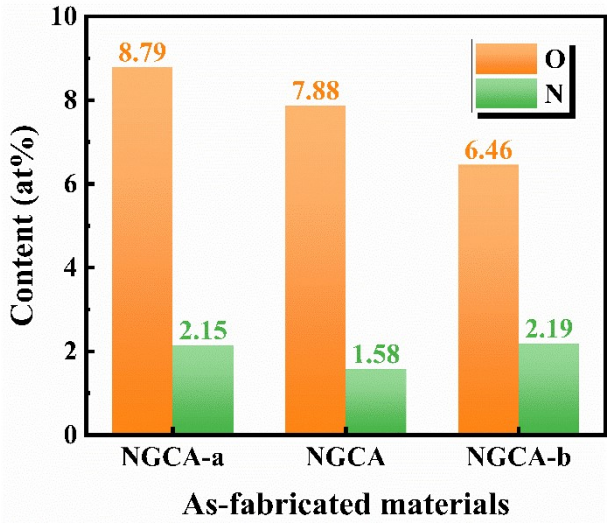

Figure S6. N and O contents of as-fabricated materials.

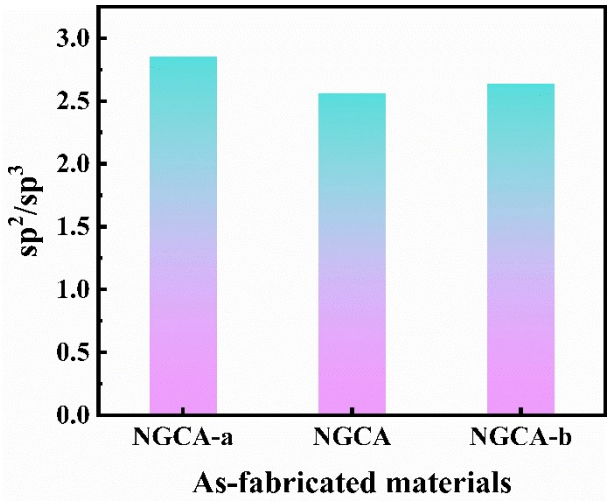

Figure S7. The ratios of sp^2 C to sp^3 C (sp^2/sp^3) of as-fabricated materials.

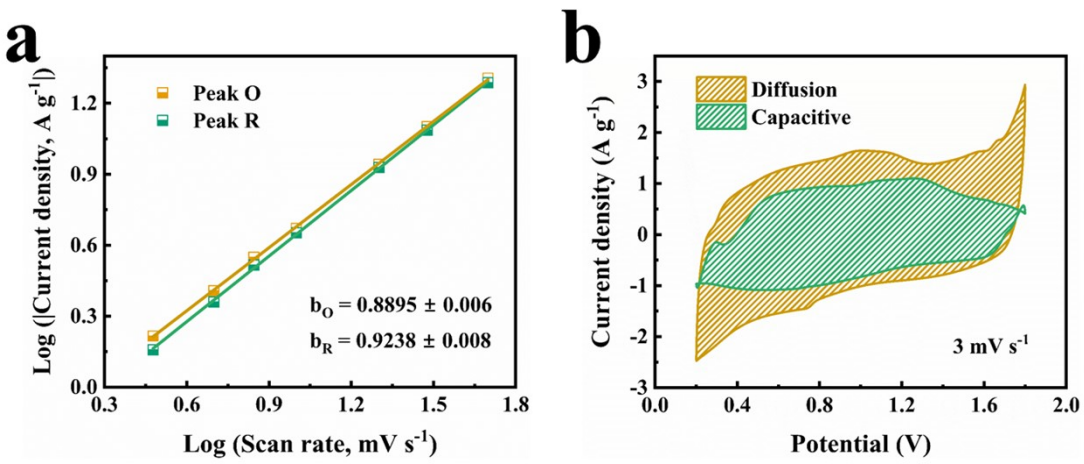

Figure S8. (a) Fitting plots of log *i* vs. log *v* from Peak O and Peak R of CV curves at a scan rate range from 3 to 50 mV s^{-1}, (b) Diffusion and capacitive contributions at a scan rate of 3 mV s^{-1} for Zn//NGCA device.

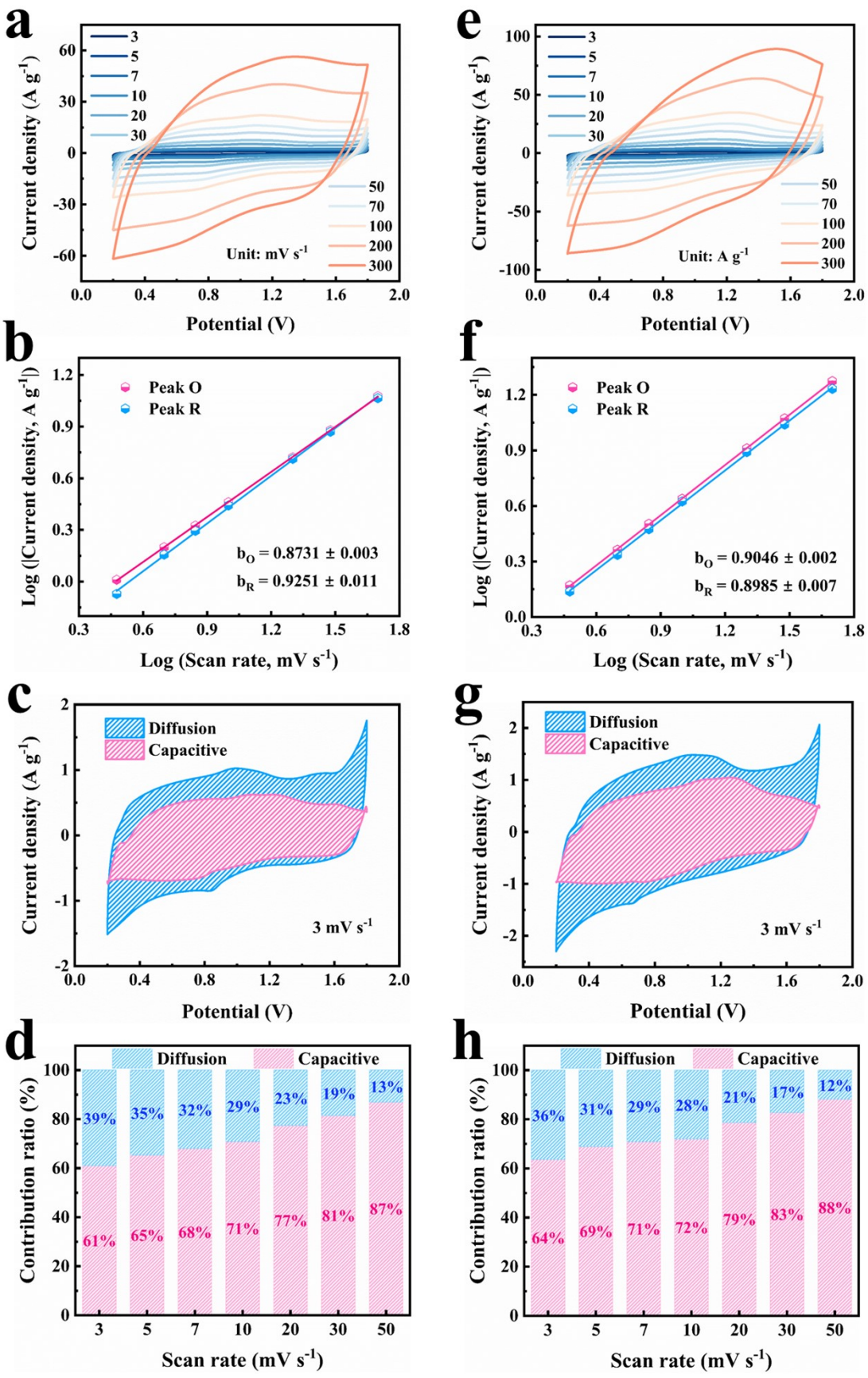

Figure S9. Electrochemical kinetics analysis of Zn//NGCA-a: (a) CV curves at a scan

rate range from 3 to 300 mV s^{-1}, (b) Fitting plots of log *i* vs. log *v* from Peak O and Peak R of CV curves at a scan rate range from 3 to 50 mV s^{-1}, (c) Diffusion and capacitive contributions at a scan rate of 3 mV s^{-1}, (d) Capacitive and diffusion contributions at different scan rates.

Electrochemical kinetics analysis of Zn//NGCA-b: (e) CV curves at a scan rate range from 3 to 300 mV s^{-1}, (f) Fitting plots of log *i* vs. log *v* from Peak O and Peak R of CV curves at a scan rate range from 3 to 50 mV s^{-1}, (g) Diffusion and capacitive contributions at a scan rate of 3 mV s^{-1}, (h) Capacitive and diffusion contributions at different scan rates.

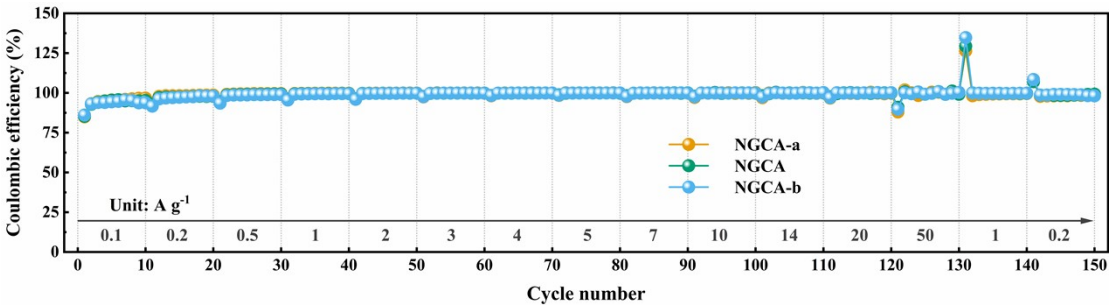

Figure S10. The Coulombic efficiencies calculated from GCD profiles of NGCAs-based aqueous ZIHSC devices at different current densities.

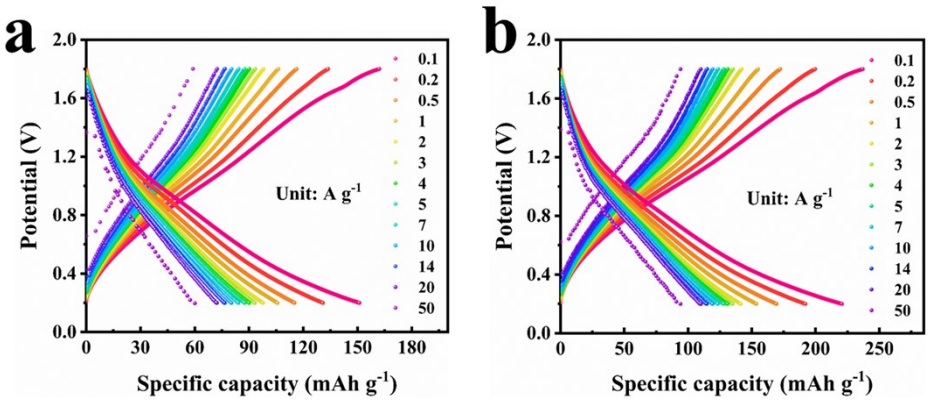

Figure S11. GCD curves at a current density range from 0.1 to 50 A g^{-1} for (a) Zn//NGCA-a and (b) Zn//NGCA-b.