Electronic Supplementary Material

Low-temperature-pyrolysis preparation of nanostructured graphite towards rapid potassium storage with high initial Coulombic efficiency

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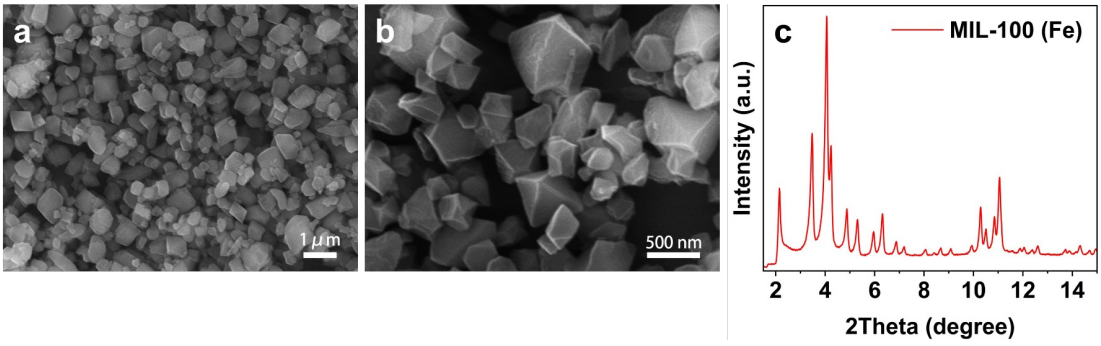

Figure S1 Characterization of the morphology and structure of MIL-100 (Fe). SEM images at (a) low magnification, (b) high magnification. (c) The XRD pattern of MIL-100 (Fe).

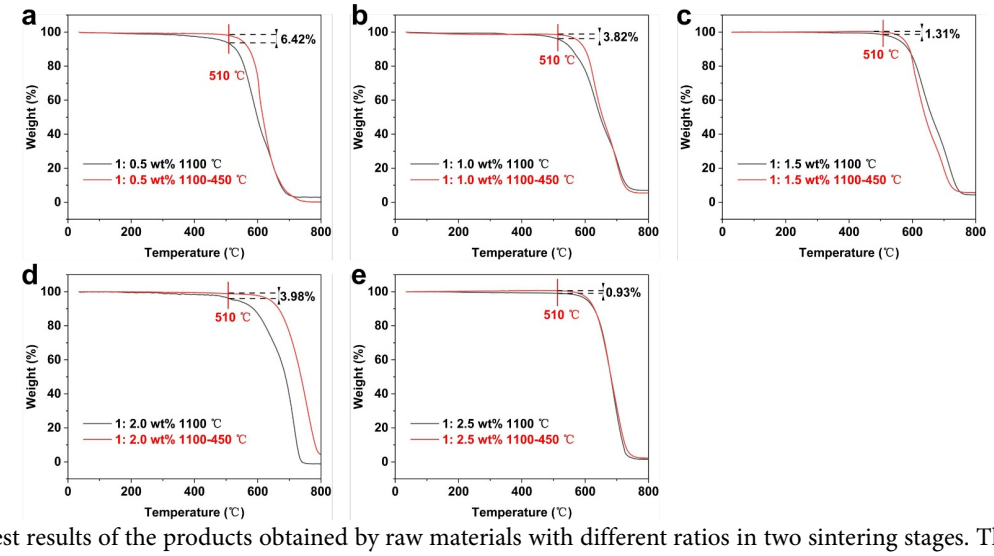

Figure S2 TG test results of the products obtained by raw materials with different ratios in two sintering stages. The mass ratio of MIL-100 (Fe) to GLC is (a) 1: 0.5 wt%, (b) 1: 1.0 wt%, (c) 1: 1.5 wt%, (d) 1: 2.0 wt%, (e) 1: 2.5 wt% respectively.

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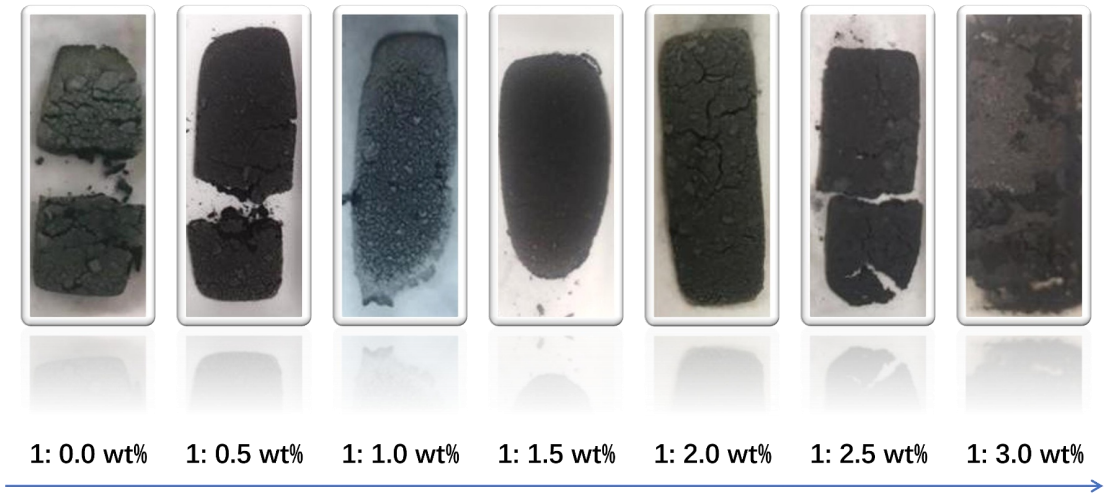

Figure S3 Optical images of the pre-sintered products at different mass ratio.

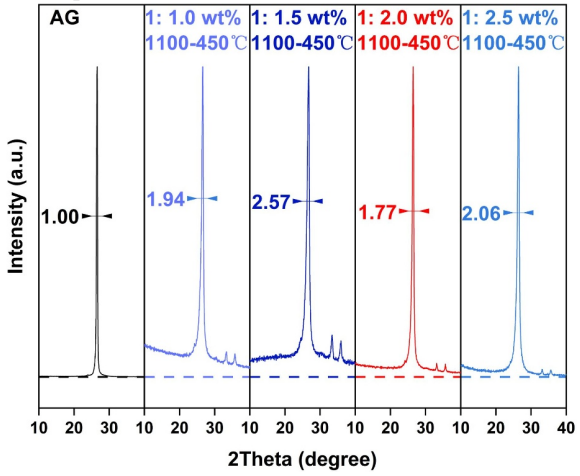

Figure S4 XRD patterns of AG and graphitic carbon materials obtained from different mass ratios.

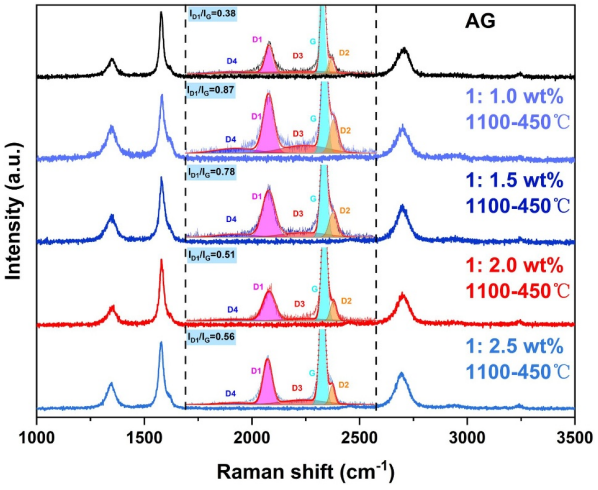

Figure S5 Raman patterns of AG and graphitic carbon materials obtained from different mass ratios.

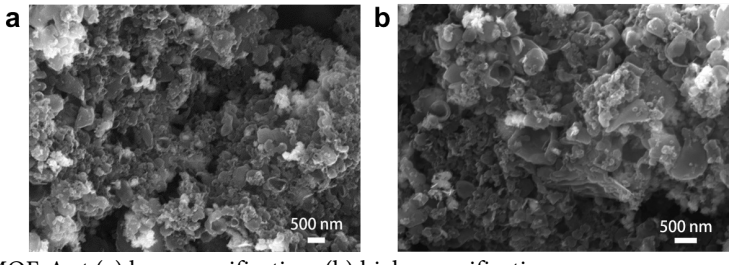

Figure S6 SEM images of P-MOF-A at (a) low magnification, (b) high magnification.

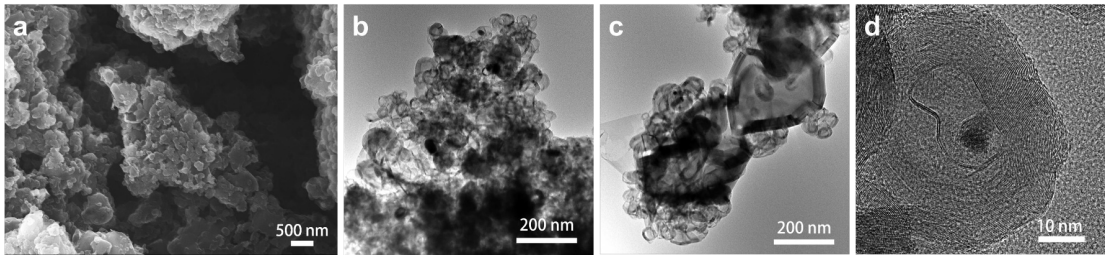

Figure S7 (a) SEM image, (b) and (c) TEM images, (d) HRTEM image of graphitic carbon obtained after calcining at 450 °C.

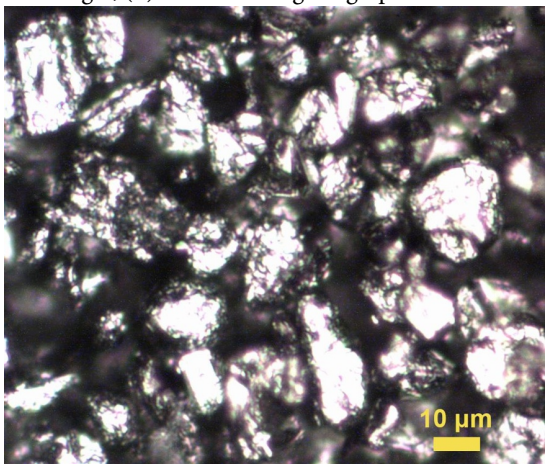

Figure S8 Optical image of AG.

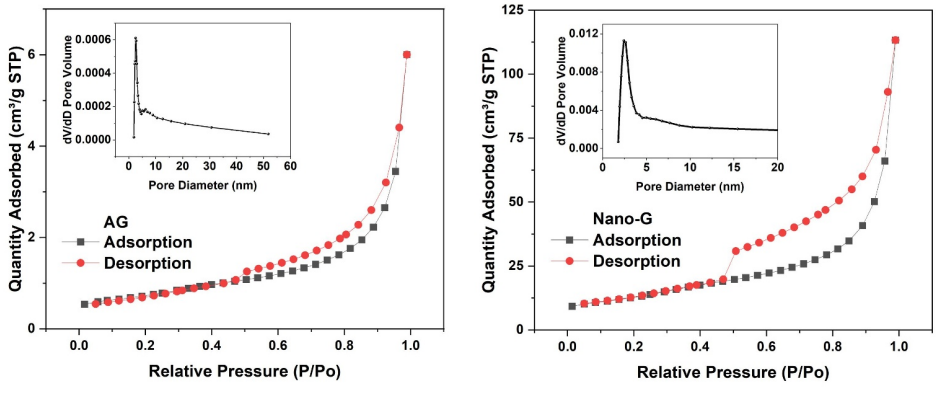

Figure S9 BET specific area and pore size distribution analysis results of AG and Nano-G.

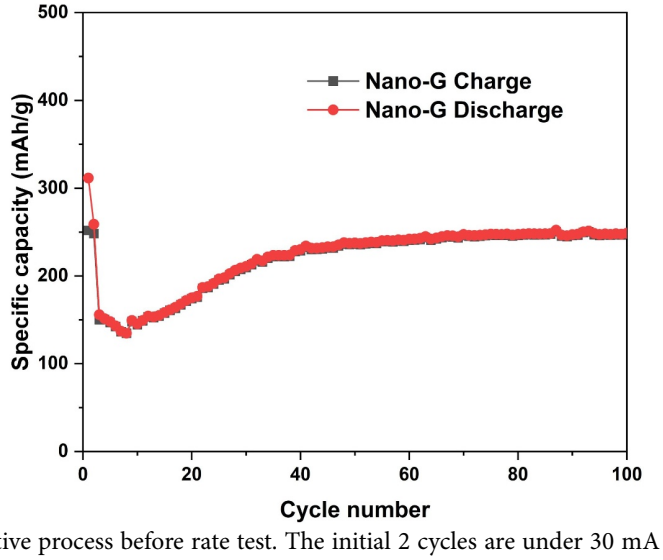

Figure S10 The 100 cycles of active process before rate test. The initial 2 cycles are under 30 mA g^{-1}, and the following 98 cycles are under 150 mA g^{-1}.

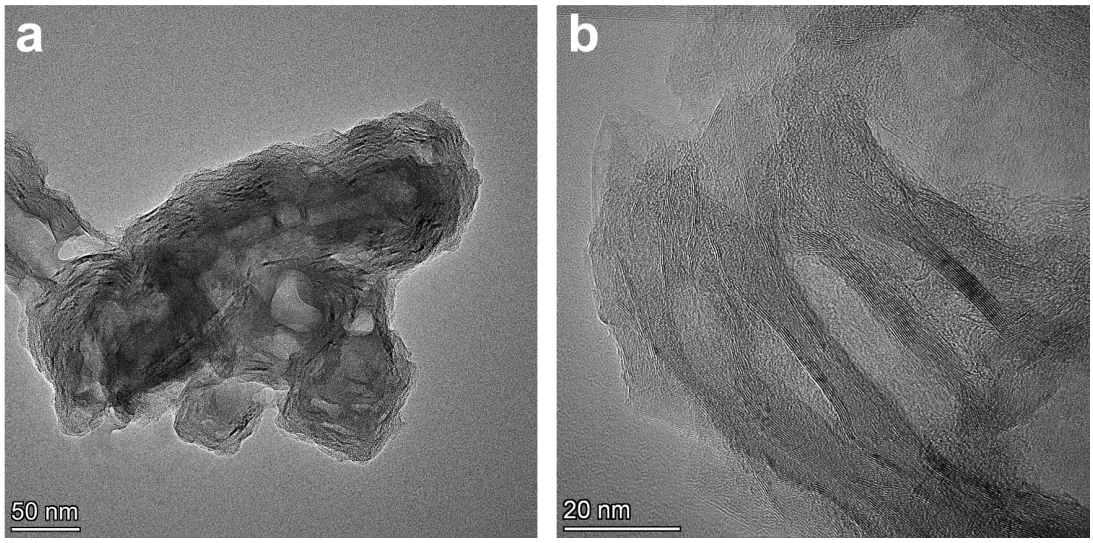

Figure S11 (a) Low and (b) high magnification TEM images after 1000 cycles at a current density of 150 mA g^{-1}.

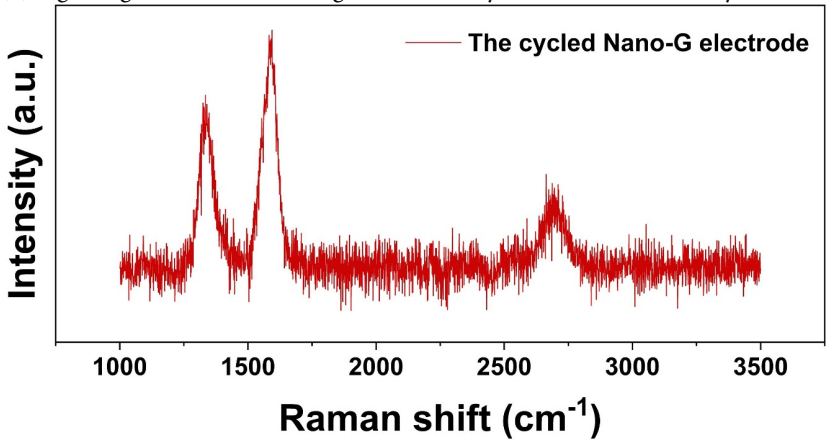

Figure S12 Raman image of cycled Nano-G electrode after 1000 cycles at a current density of 150 mA g^{-1}.

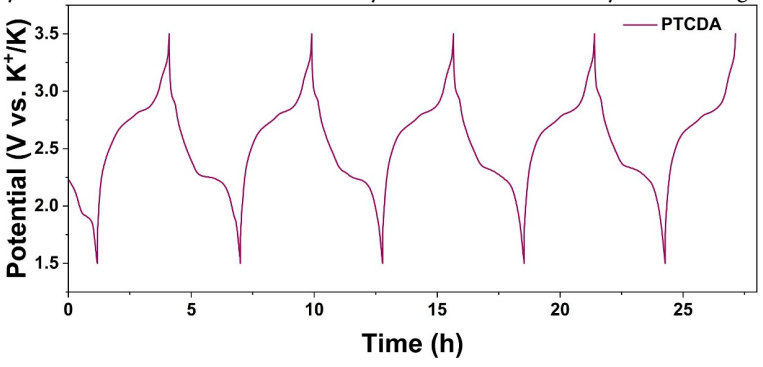

Figure S13 The cycle curve of PTCDA half cell under voltage window of 1.5-3.5V and current density of 50 mA g^{-1}.