

Supplementary

# Bismuth-Nanoparticles-Embedded Porous Carbon Derived from Seed Husks as High-Performance for Anode Energy Electrode

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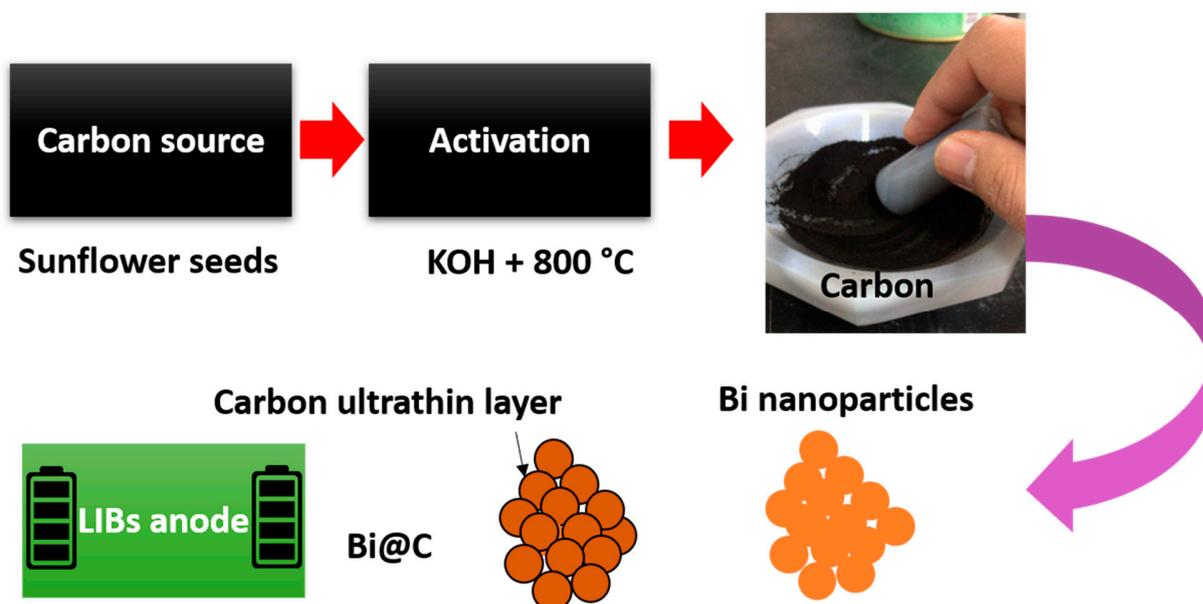
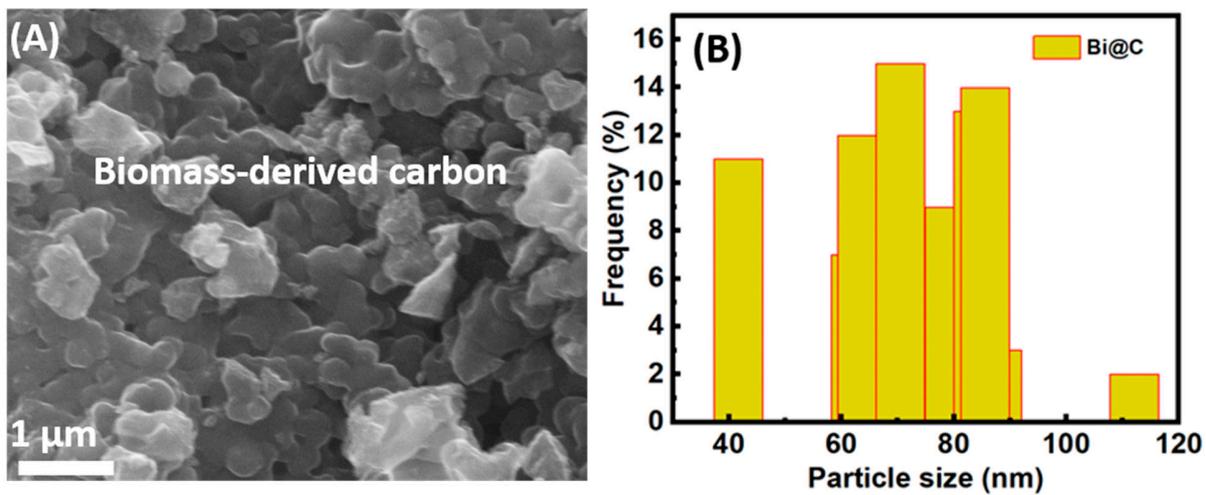
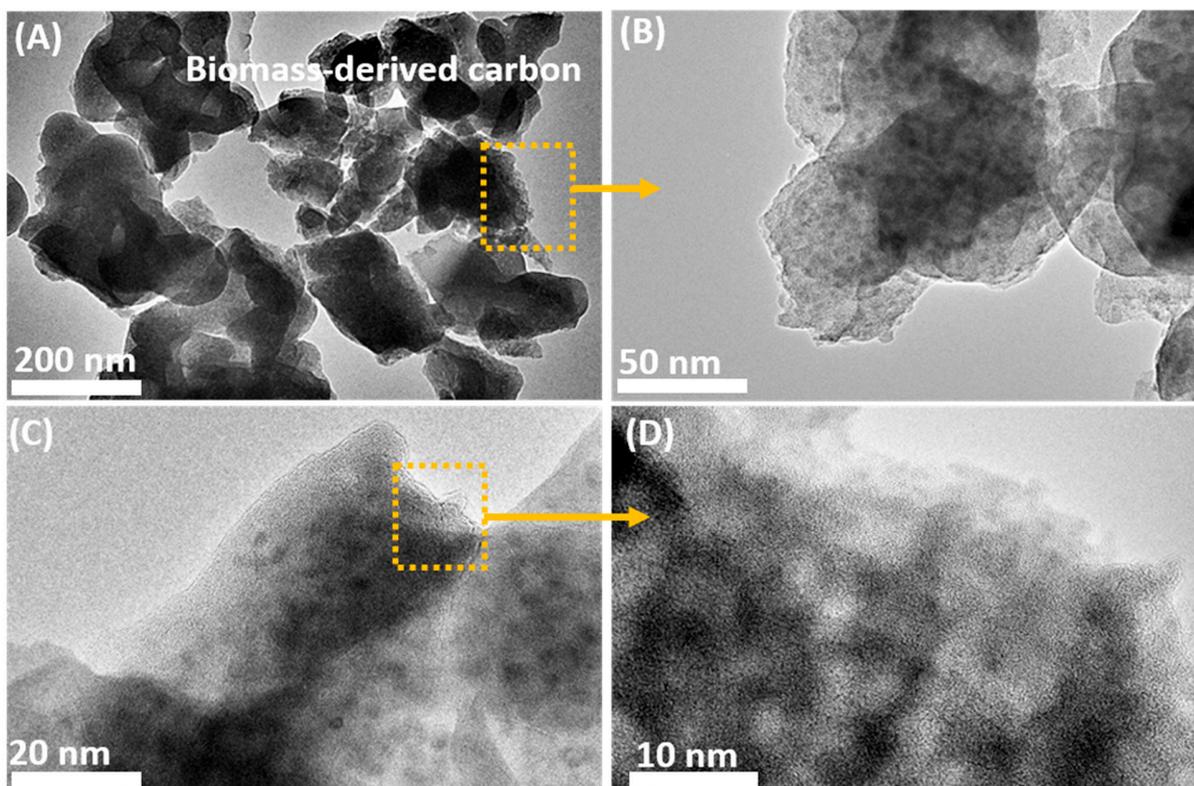


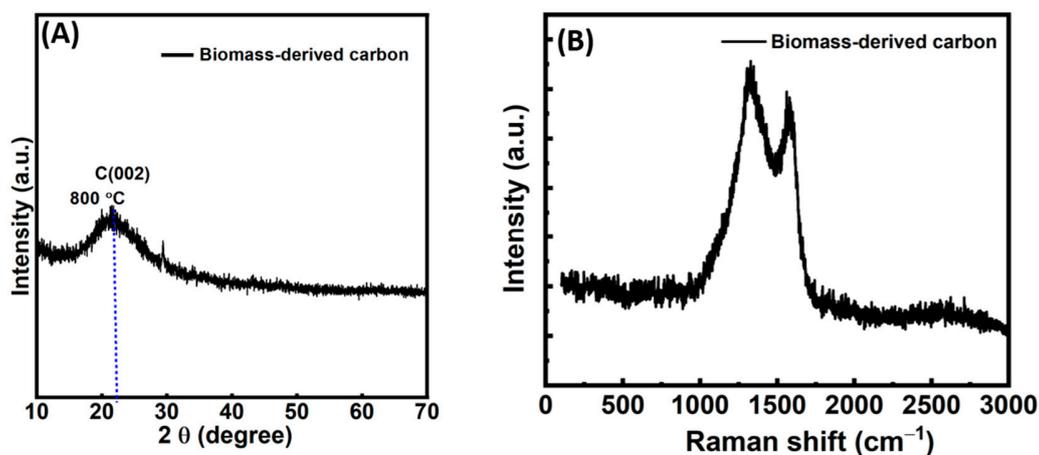
Figure S1. Schematic diagram of Biomass-derived carbon and Bi@C composite.



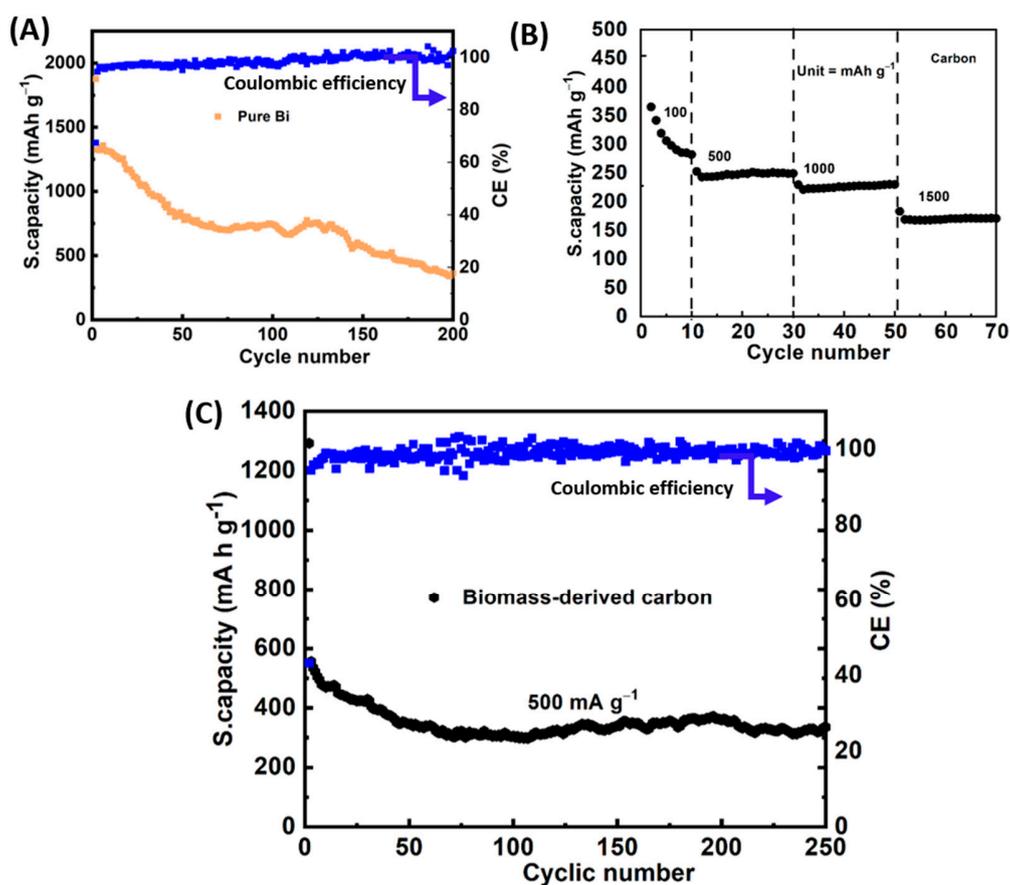
**Figure S2.** (A) SEM image of Biomass-derived carbon (B) the average size of particles Bi@C composite.



**Figure S3.** (A) TEM image of Biomass-derived carbon and (B–D) different resolution of carbon nano particles.



**Figure S4.** (A) XRD spectra of Biomass-derived carbon and (A,B) RAMAN spectra of Biomass-derived carbon.



**Figure S5.** (A) cycling performance of pure Bi nanoparticles for 200 cycles, (B) different current rate performance of Biomass-derived carbon and (C) cycling performance at a current rate of 500  $\text{mA g}^{-1}$  of biomass-carbon sample for 250 cycles.