Near-Perfect Suppression of Li Dendrite Growth by Novel Porous Hollow Carbon Fibers Embedded with ZnO Nanoparticles as Stable and Efficient Anode for Li Metal Batteries

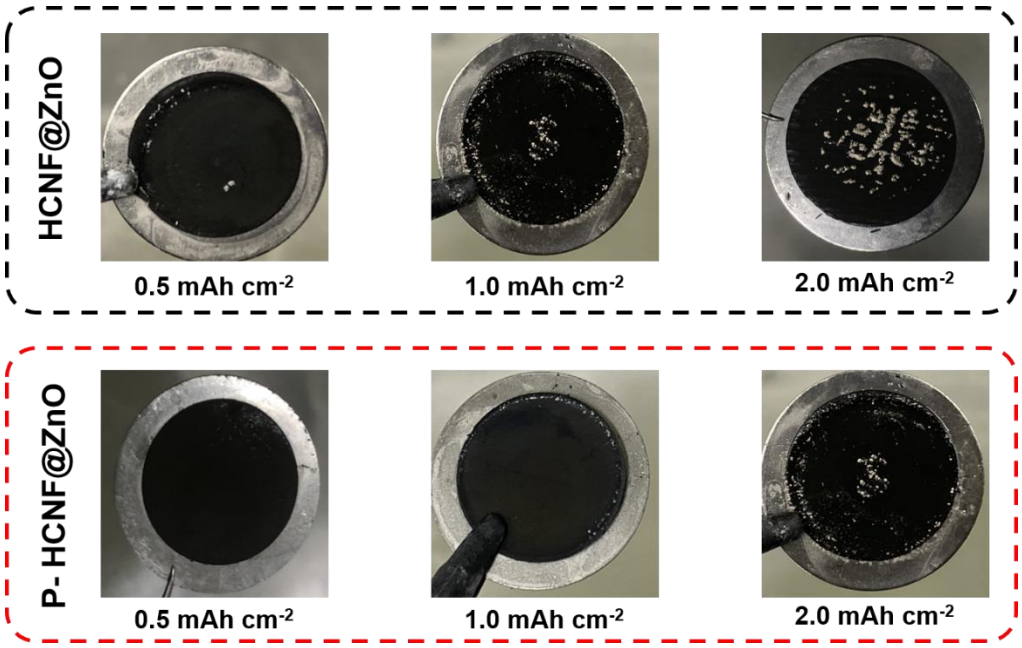


Fig. S1. Photographs of the HCNF@ZnO and P-HCNF@ZnO electrodes electroplated under various Li areal capacities at a current density of 0.1 mA cm^{-2}.

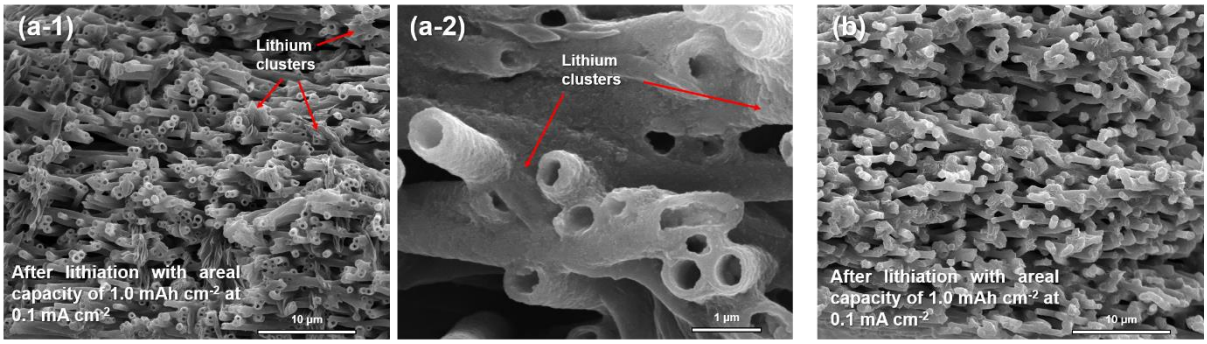


Fig. S2. SEM images of (a-1 and a-2) the P-HCNF without ZnO and (b) P-HCNF@ZnO after lithiation with an areal capacity of 1.0 mAh cm^{-2}.

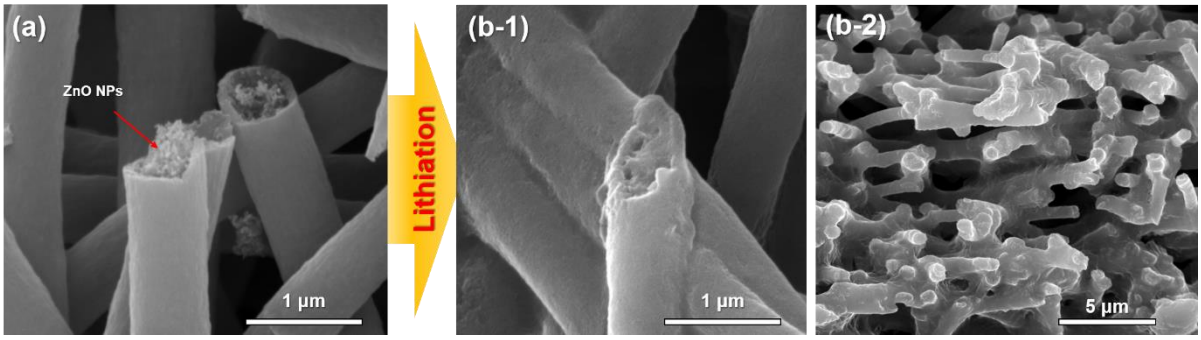


Fig. S3. SEM images of the P-HCNFs with an increased ZnO content (a) before and (b-1 and b-2) after lithiation under an areal capacity of 1.0 mAh cm^{-2} .

For fabrication of P-HCNF without ZnO or with increased ZnO content, the core-side solutions were prepared by dissolving 21 wt% of PMMA with 0 wt% or 3.0 wt% of ZnO NPs in DMF. Electrospinning and carbonization processes were carried out under the same conditions as the processes described in the Experiment part.

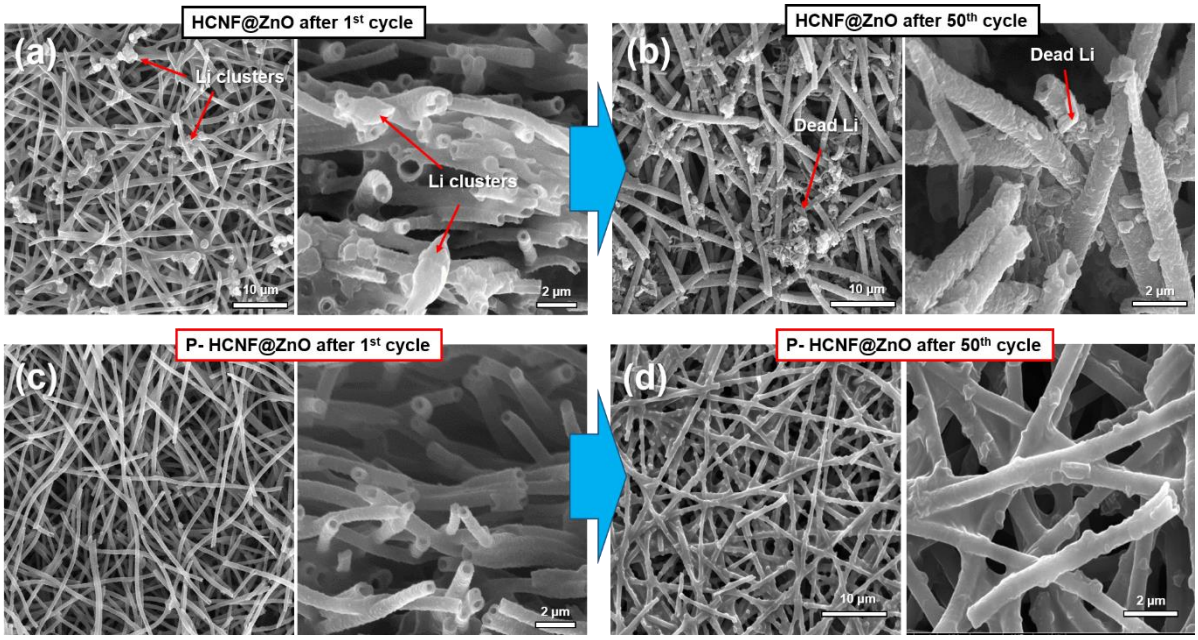
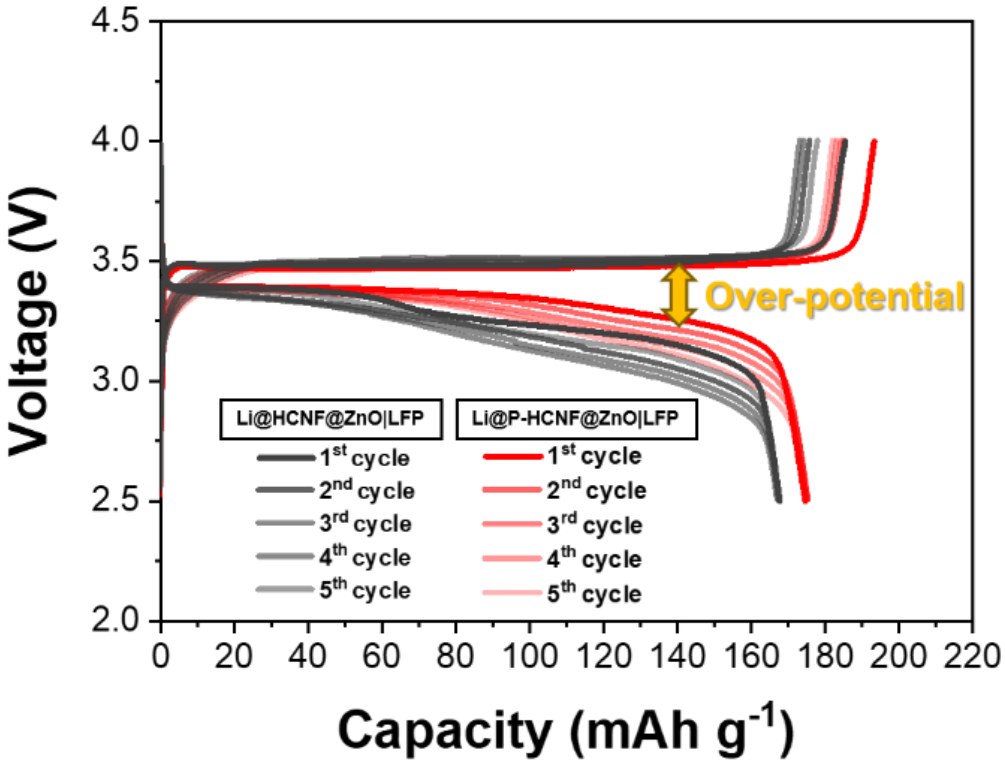


Fig. S4. SEM images of Li plating/stripping behaviors on the HCNF@ZnO and P-HCNF@ZnO after 1st cycle (a and c) and after 50th cycle (b and d) at 1.0 mA cm^{-2}.



	Li@HCNF@ZnO|LFP	Li@P-HCNF@ZnO|LFP
Capacity	~ 168.0 mAh g^{-1}	~ 175.3 mAh g^{-1}
Over-potential	~ 0.32 V	~ 0.29 V

Fig. S5. The charge/discharge voltage profiles of the LFP full cells employing a Li@HCNF@ZnO|LFP and a Li@P-HCNF@ZnO|LFP, respectively.