

Aramid and Zirconia Coated Separator for Enhanced Electrochemical Performance of Lithium-ion Batteries

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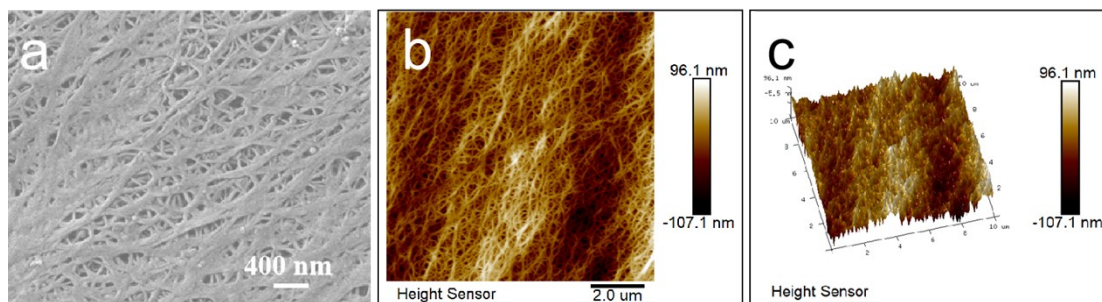


Figure S1 SEM image (a), AFM topographic image (b) and height image (c) of the bare PE separator.

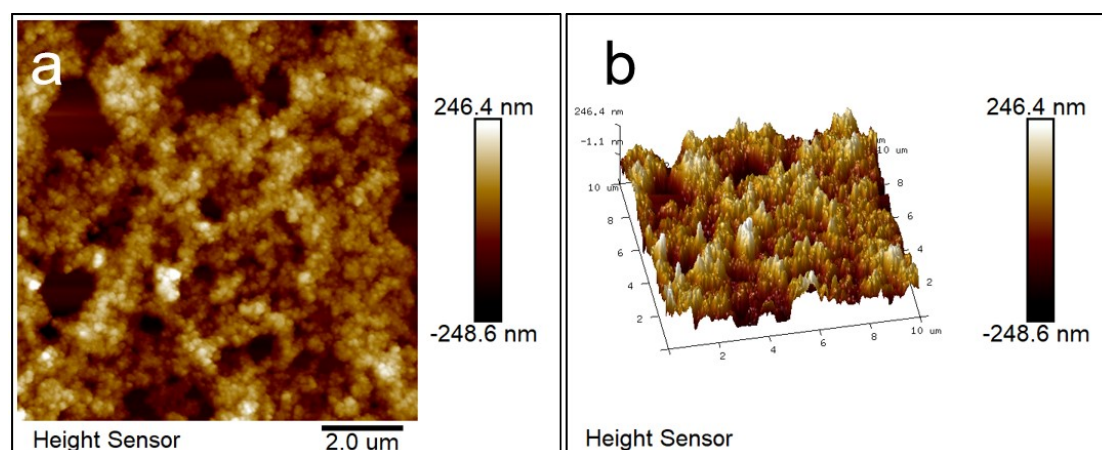


Figure S2 (a) Atomic force microscopy (AFM) topographic image and (b) height image of aramid fibers.

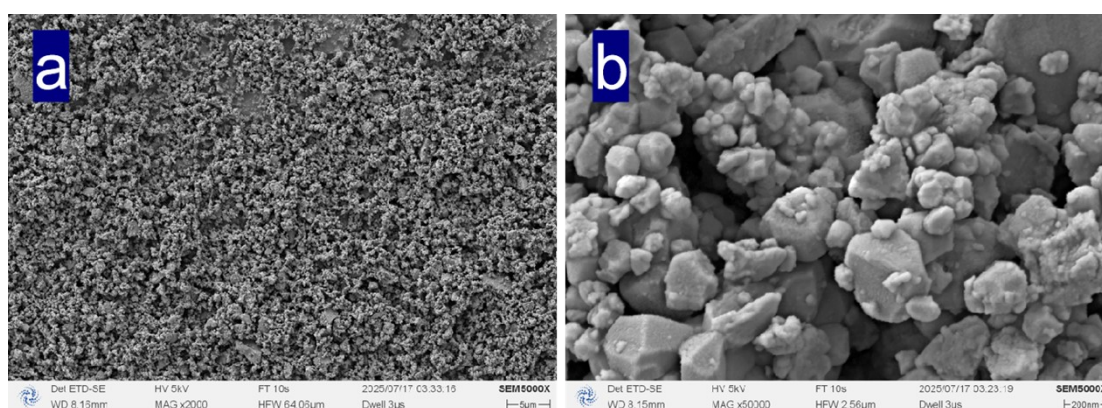


Figure S3 (a) 2000x, (b) 50000x magnification SEM image of ZrO_2 particles

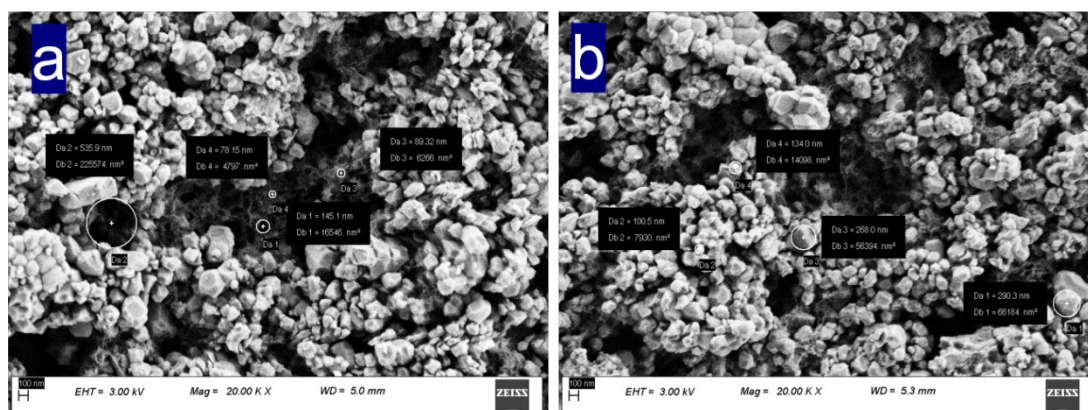


Figure S4 20,000x magnification SEM image of the PE@AF-ZrO₂, (a) front side, (b) back side.

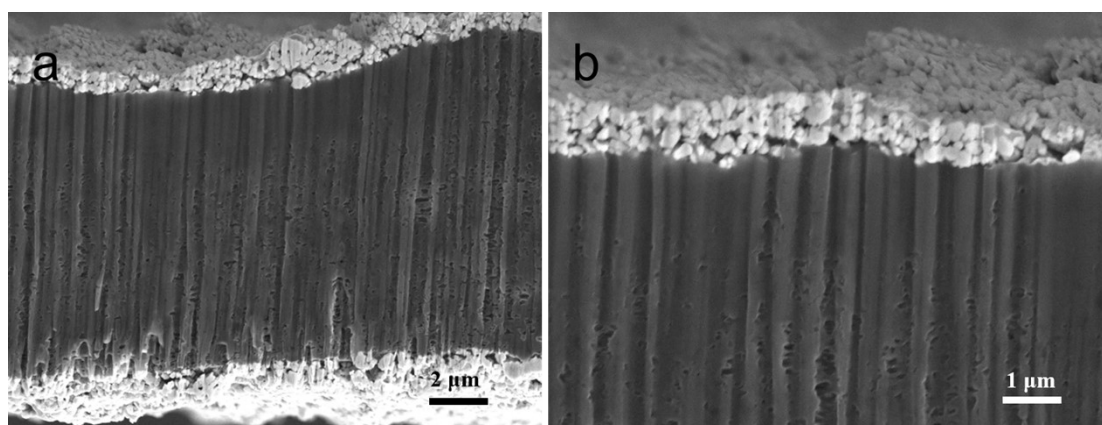


Figure S5 FIB-SEM image of the PE@AF-ZrO₂ cross-section, (a) low-magnification, (b) high-magnification.

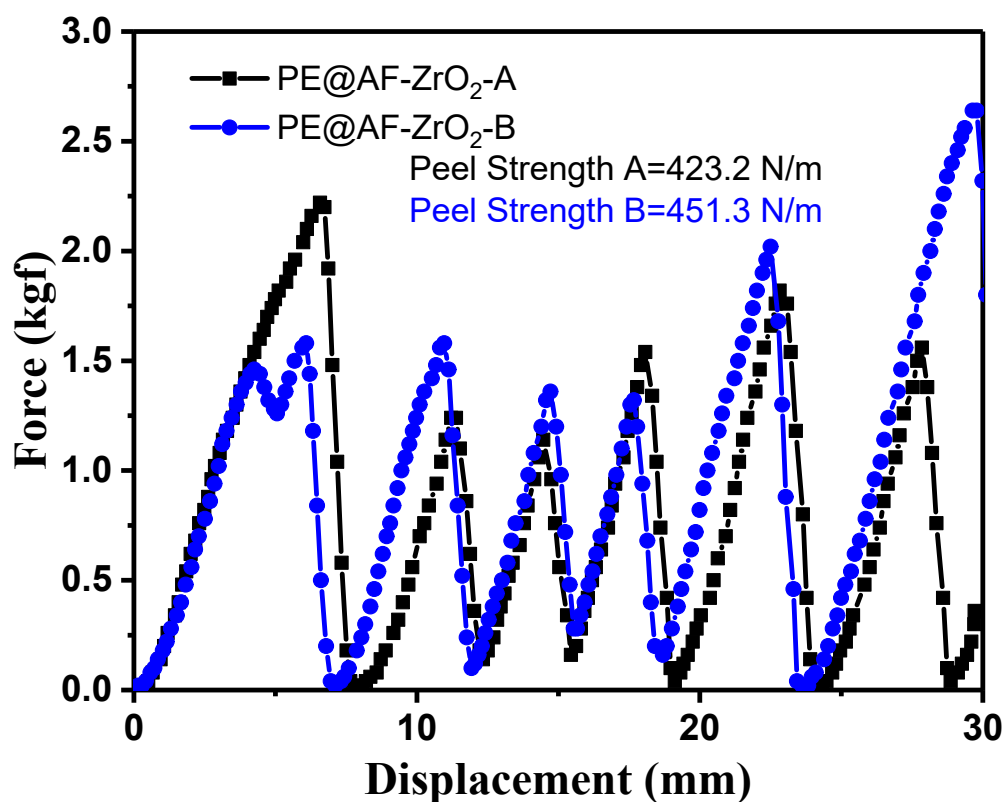


Figure S6 Peel force-displacement curve of PE@AF-ZrO₂ separator sample.

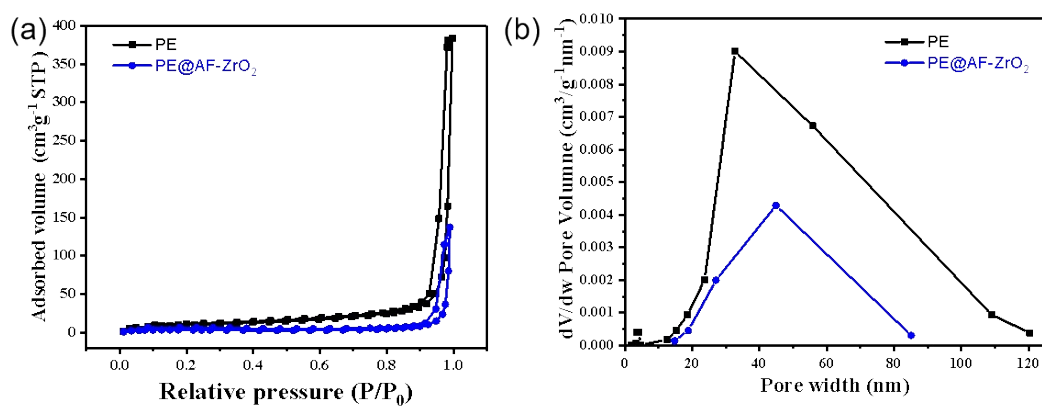


Figure S7 (a) N₂ adsorption-desorption isotherms of pristine PE and PE@AF-ZrO₂ separators, (b) Corresponding BJH pore size distribution curves.

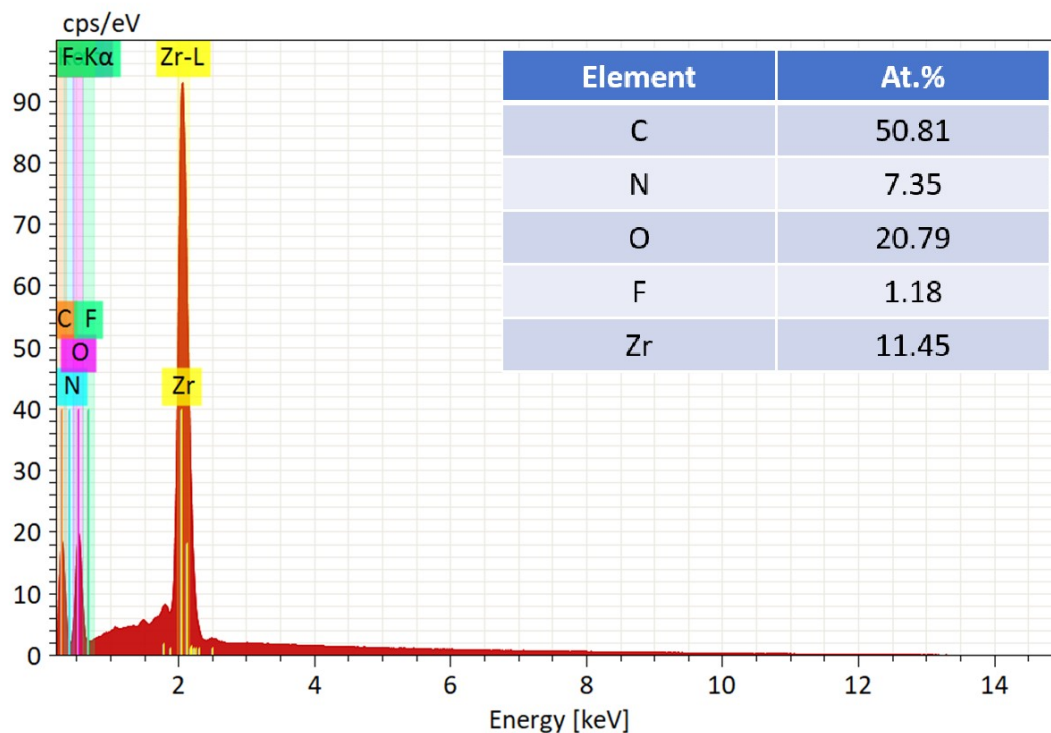


Figure S8 Energy-dispersive spectroscopy of PE@AF-ZrO₂.

Contact Angle test video files for the bare PE separator and the PE@AF-ZrO₂ separator.



Bare PE.mp4

Video S9a Contact angle test video of the bare PE separator.



PE@AF-ZrO₂.mp4

Video S9b Contact angle test video of the PE@AF-ZrO₂ separator.