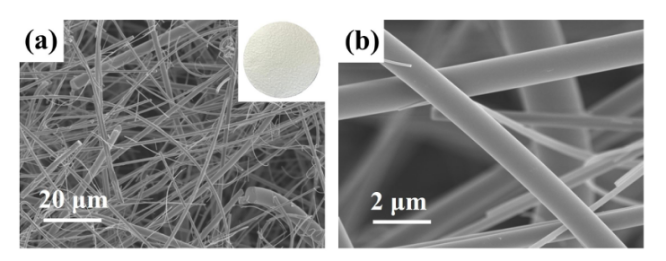
Supporting Information

Cu(II)/polydopamine-modified glass fiber separators towards high-performance zinc-ion batteries

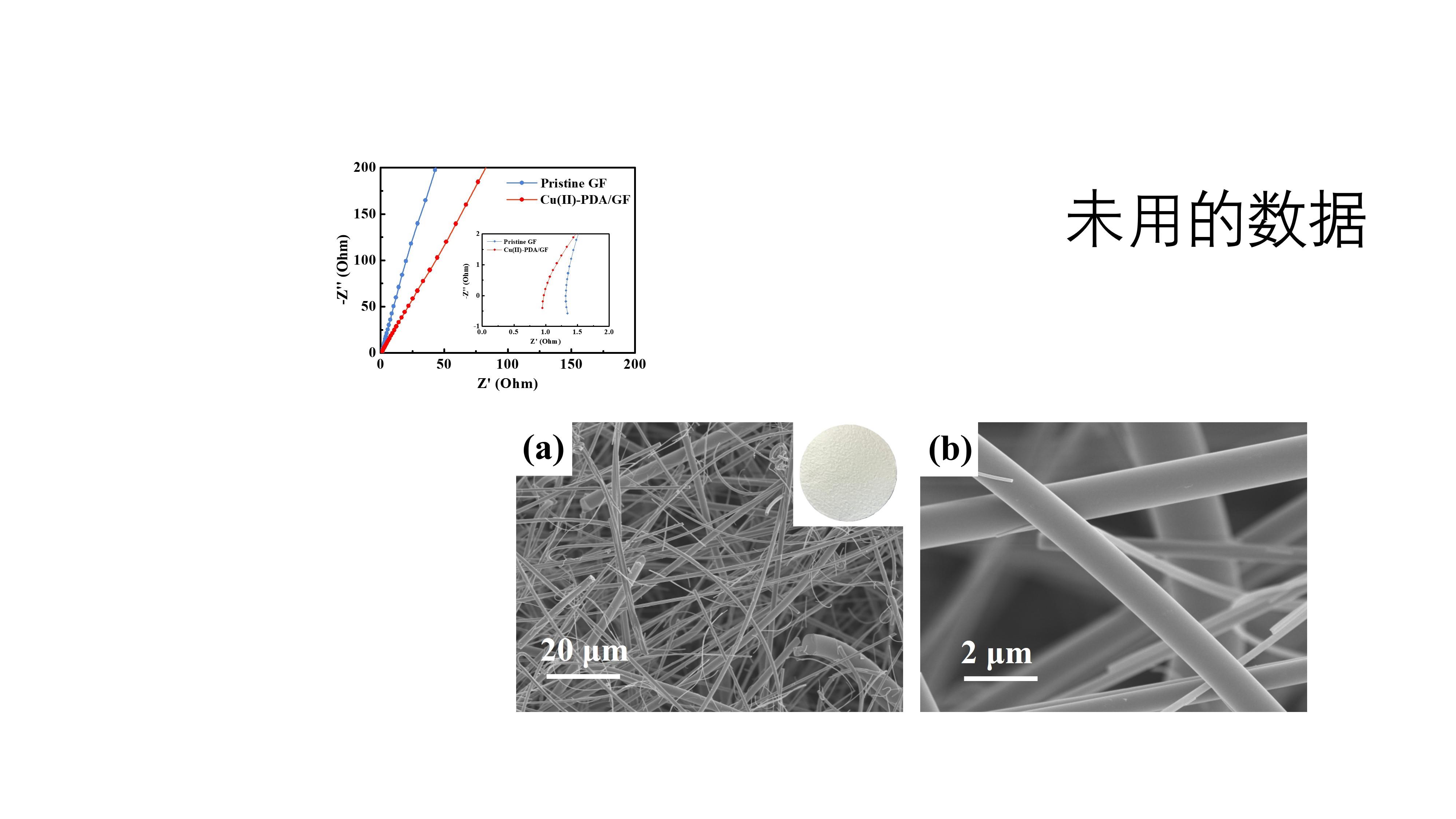
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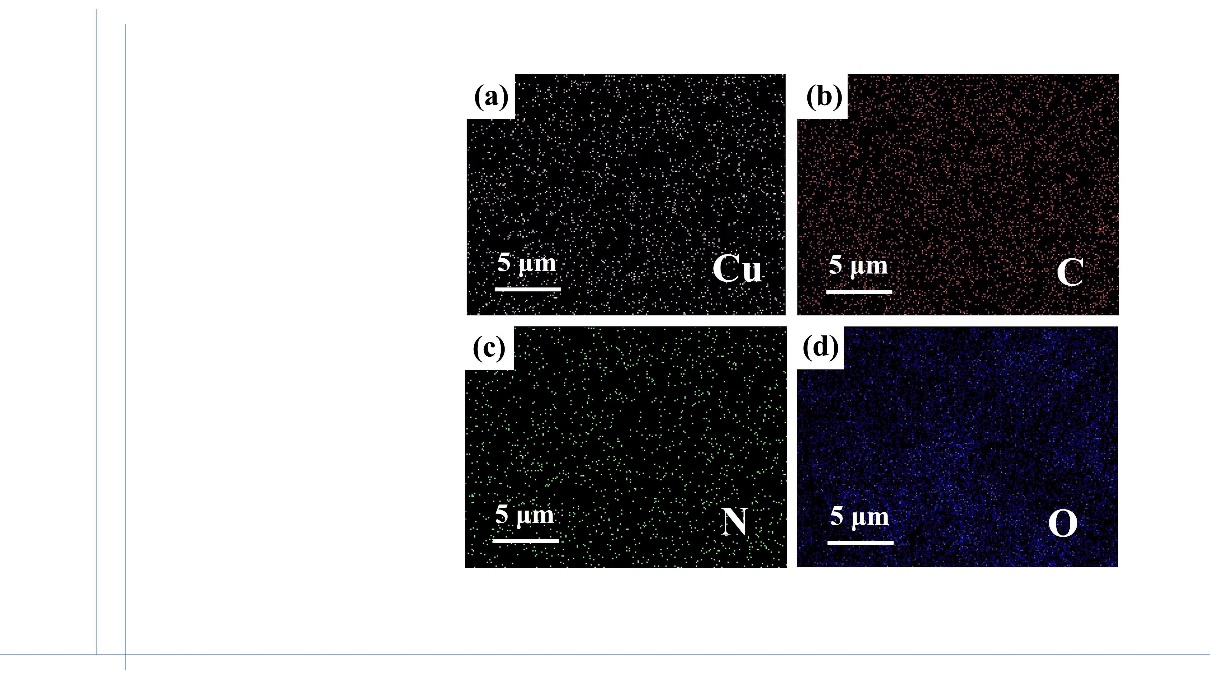
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**Figure S1.** (a, b) SEM images of pristine GF separator. Insert in (a) is the photo of pristine GF.



**Figure S2.** EIS test of the stainless steel//stainless steel cells with different separators.

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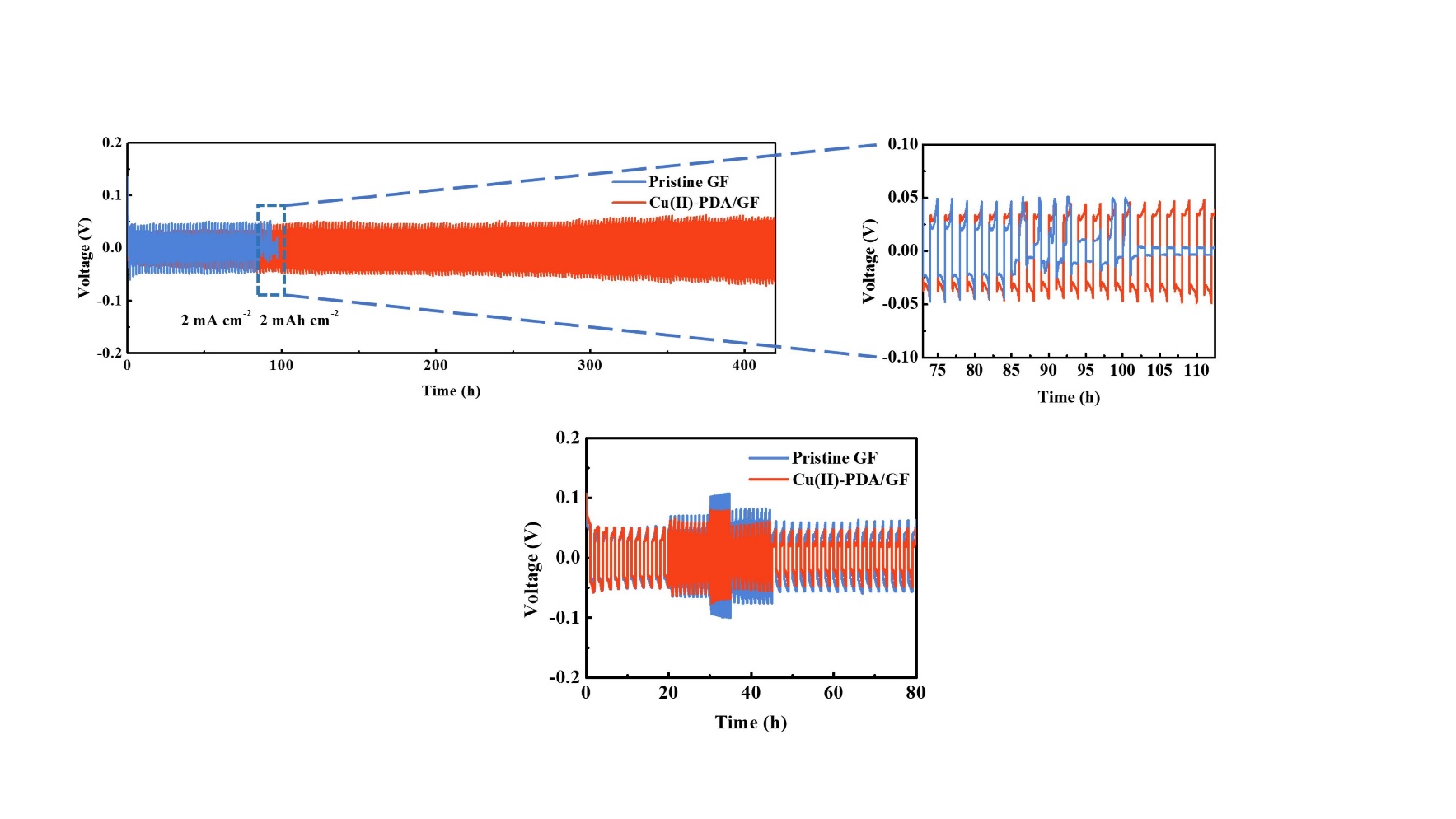
**Figure S3.** EDS images of Zn foils after Zn deposition for 10 min at 1 mA cm−2. In the symmetric cells using Cu(II)-PDA/GF separator.



**Figure S4.** Coulombic efficiency of Zn plating/stripping on Cu at the current density of 1 mA cm-2 with the fixed capacity of 1 mAh cm-2 in Cu//Zn cells with different separators.

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**Figure S5.** Voltage and capacity distribution of Cu//Zn cells with pristine GF separator.



**Figure S6.** Cycling performance of the symmetrical cells with pristine GF and Cu(II)-PDA/GF separator at the current density of 2 mA cm-2 with the fixed capacity of 2 mAh cm-2.

**Table S1.** Data for GF and Cu-PDA/GF separators obtained from electrolyte absorption experiments.

|  |  |  |
| --- | --- | --- |
| Separators | GF | Cu(II)-PDA/GF |
| Wa(g) | 0.02491 | 0.02419 |
| Wb(g) | 0.4085 | 0.5644 |
| Electrolyte absorption (%) | 1540 | 2234 |