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CORRECTION

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# Correction: Ultrathin cellulosic gel electrolytes with a gradient hydropenic interface for stable, high-energy and flexible zinc batteries

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Correction for 'Ultrathin cellulosic gel electrolytes with a gradient hydropenic interface for stable, high-energy and flexible zinc batteries' by Jichao Zhai *et al.*, *Energy Environ. Sci.*, 2025, **18**, 4241–4250, https://doi.org/10.1039/D5EE00158G.

The authors would like to express their apologies regarding inaccuracies in the $Zn^{2+}$ transference numbers ($t_{Zn^{2+}}$) presented in the Results and Fig. S14 and S15 of the original article. Specifically, an incorrect $\Delta V$ was applied, which may have led to erroneous $Zn^{2+}$ deposition, fluctuations in system resistance, and misleading ion transference numbers. However, it is important to note that this issue with the transference number does not alter the core conclusions of the paper. The corrected Fig. S14 and S15 are provided below, and the supplementary information has been updated accordingly.

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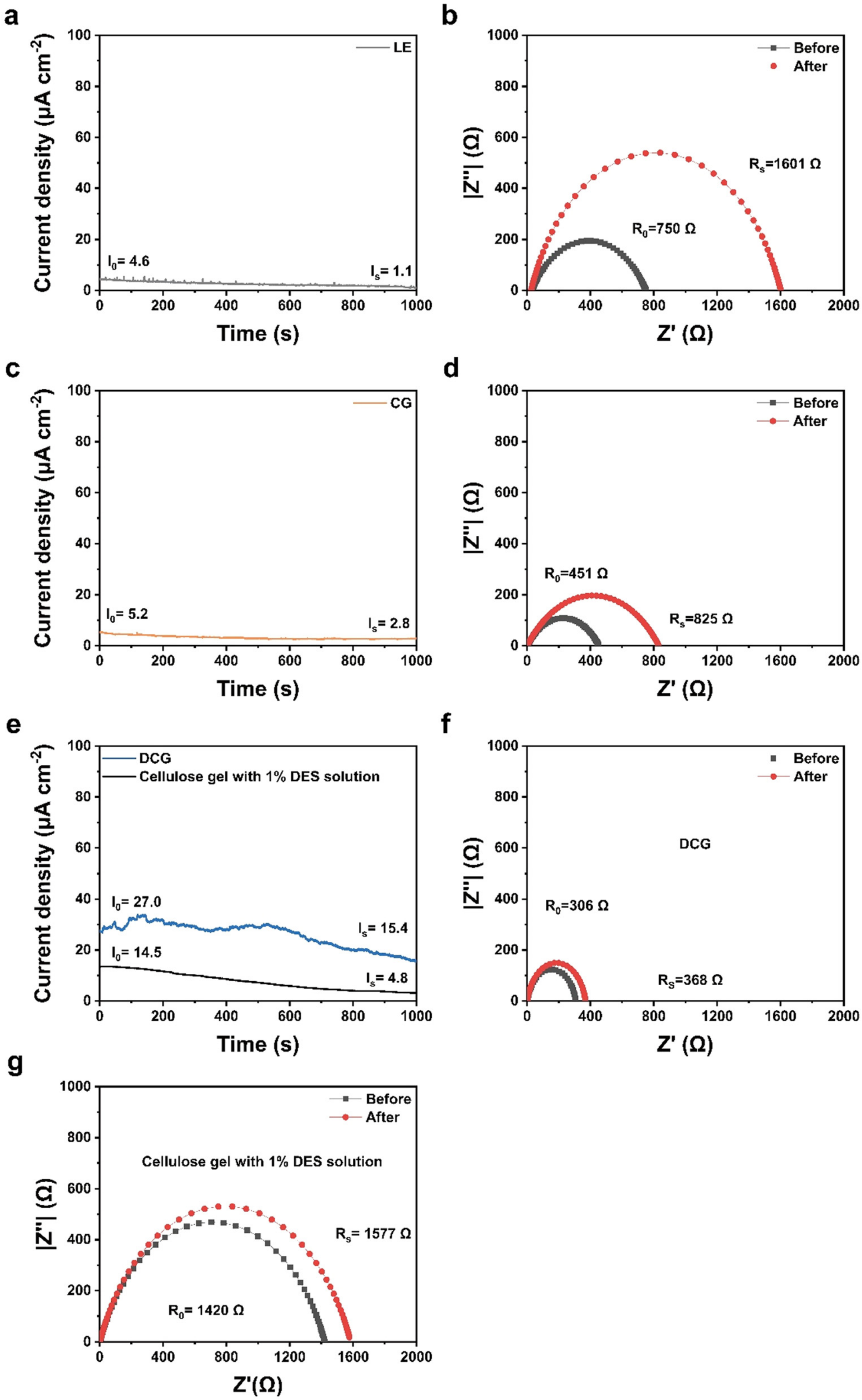


**Fig. S14** (a), (c) and (e) Current–time plots of Zn||Zn symmetric cells with different electrolytes after polarization at a constant potential (10 mV) for 1000 s. (b), (d), (f) and (g) the corresponding Nyquist plots before and after polarization tests.

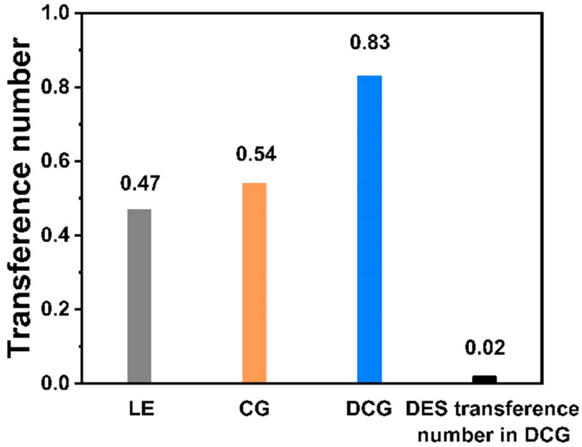


**Fig. S15** The transference number comparison of different electrolyte systems.

In the main text, the claim "As shown in Fig. S14 and S15 (ESI†), the transference number of $Zn^{2+}$ for DCG (1.13) is significantly higher than that of CG (0.87) and LE (0.84), demonstrating the exceptional $Zn^{2+}$ transport capability of the gradient DES interface." should be amended to "As shown in Fig. S14 and S15 (ESI†), the transference number of $Zn^{2+}$ for DCG (0.81) is significantly higher than that of CG (0.54) and LE (0.47), demonstrating the exceptional $Zn^{2+}$ transport capability of the gradient DES interface." to ensure accuracy.

Furthermore, the statement "The transference numbers were measured according to the chronoamperometry (CA) measurement on Zn‖Zn symmetric battery by applying a potential of 150 mV at room temperature." in the Supplementary Information has been revised to "The transference numbers were measured according to the chronoamperometry (CA) measurement on Zn‖Zn symmetric battery by applying a potential of 10 mV at room temperature." for consistency.

We also measured the impedance of Zn‖Zn batteries using various electrolytes both before and after polarization. A voltage of 10 mV was applied to test the current–time ($I$–$t$) curves for LE, CG, DCG, and cellulose gels containing 1% DES additive. The obtained values are as follows: $I_{Zn0}$ = 13.5 μA cm$^{-2}$, $I_{Zns}$ = 10.6 μA cm$^{-2}$, $R_{Zn0}$ = 390 Ω, and $R_{Zns}$ = 480 Ω.

The transference number was further evaluated by the following equation (the typical Evans method):[1,2]

$$t^{+} = \frac{I_s(\Delta V - I_0 R_0)}{I_0(\Delta V - I_s R_s)}, \quad (1)$$

where $\Delta V$ is the applied polarization voltage (10 mV), $I_0$ and $R_0$ are the initial current and resistance, respectively, and $I_s$ and $R_s$ are the steady-state current and resistance, respectively. Thereby, the transference number of DCG is estimated as 0.83, with $Zn^{2+}$ exhibiting a transference number of 0.81. The contribution of the pristine DES to the transference number in the composite electrolyte is negligible.

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

## References

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