

CORRECTION

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Correction: Synergy of light and acid–base reaction in energy conversion based on cellulose nanofiber intercalated titanium carbide composite nanofluidics

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Correction for 'Synergy of light and acid–base reaction in energy conversion based on cellulose nanofiber intercalated titanium carbide composite nanofluidics' by Pei Liu *et al.*, *Energy Environ. Sci.*, 2021, **14**, 4400–4409, DOI: 10.1039/D1EE90054D.

The following paragraph was missing from the right-hand column of page 4401, and should have been included after the paragraph "Osmotic energy harvested by utilizing... weight percentage of 10% was used for further research":

"Many attempts have been made to increase the energy extracted from the concentration gradient; however, the results are not very promising. Here, we propose a light and acid–base reaction hybrid external factor to further increase the capture of the chemical potential gradient. For this purpose, a chemical reaction (chemical) and light (physical) were selected as the assisting factors (Fig. 3a). The enhancement of energy conversion by the acid–base reaction (chemical), was studied first (Fig. 3a(i)). Acidic (HCl) and alkaline (NaOH) solutions with a 50-fold concentration gradient were used to investigate the energy conversion performance of the composite system. Considering the Ag/AgCl electrodes used and the maximum concentration of NaOH (0.01 M), 0.1 mM NaCl was selected as the supporting electrolyte (Note S4, ESI†). Additionally, several of the solutions used in this acid–base system contain 0.1 mM NaCl, further confirming the selection of this solution as the supporting electrolyte. Briefly, two compartments of the cell were filled with 0.5 M HCl and 0.01 M NaOH solutions, and the MXene/CNF composite membrane was placed between them. As shown in Fig. S4a (ESI†), the output power density reaches a maximum value of $\sim 76.09 \text{ W m}^{-2}$ with 0.5 M HCl and 0.01 M NaOH, which is much higher than that using a salt solution (NaCl) at the same concentration ($\sim 4.84 \text{ W m}^{-2}$). Additionally, the current density on the external circuits decreases with increasing load resistance (Fig. S4b, ESI†). Although a larger testing area is more relevant to the actual membrane performance, the number of co-ions in the nano-confined channels increases as the testing area increases, resulting in a decrease in the average power density.³² Hence, to better evaluate the performance for practical applications, the influence of the testing area on the power density of the chemical reaction enhanced energy conversion system was also investigated (Fig. S4c, ESI†)."

In the right-hand column of page 4404, the sentence beginning "High photothermal conversion..." should read:

"High photothermal conversion of the MXene/CNF composite membrane is shown in Fig. S8 (ESI†)."

On page 4405 of the manuscript, eqn (11) and (13) should read:

$$k = Ae(-E_a/RT) \quad (11)$$

$$F \propto F_O + F_p(T, n_B) + F_c(c_B, t) + \tau_{p-c}(T, c_B) \quad (13)$$

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

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