Correction

Correction: Duburg et al. Composite Polybenzimidazole Membrane with High Capacity Retention for Vanadium Redox Flow Batteries. *Molecules* 2021, 26, 1679

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The authors wish to make the following changes to their paper [1].

2. Results

Table 1. V(IV) diffusion through NR212, FAP-450, and PP-PBI.

| Name     | Slope $[\text{V(IV)}]$ vs. $t$ (M L$^{-1}$ h$^{-1}$) | V(IV) Diffusion (cm$^2$·min$^{-1}$) |
|----------|-----------------------------------------------|----------------------------------|
| NR212    | $(650 \pm 8) \times 10^{-6}$                  | $(744 \pm 9) \times 10^{-8}$     |
| FAP-450  | $(259 \pm 1) \times 10^{-6}$                  | $(351 \pm 1) \times 10^{-8}$     |
| PP-PBI   | $(18 \pm 2) \times 10^{-6}$                   | $(14 \pm 1) \times 10^{-8}$      |

To be replaced with:

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Explanation for the correction:

We observed an error in the calculations of the vanadium (IV) diffusion values; as a result of this, the order of magnitude of these values has been corrected to $10^{-9}$ cm$^2$·min$^{-1}$ from $10^{-8}$ cm$^2$·min$^{-1}$.

3. Discussion

Original:

V(IV) diffusion through the composite PP-PBI membrane was found to be the lowest ($(14 \pm 1) \times 10^{-8}$ cm$^2$·min$^{-1}$), while commercial Nafion® NR212 suffered the highest V(IV) diffusion ($(744 \pm 9) \times 10^{-8}$ cm$^2$·min$^{-1}$),
To be replaced with:

V(IV) diffusion through the composite PP-PBI membrane was found to be the lowest 
$((14 \pm 1) \times 10^{-9} \text{ cm}^2\text{-min}^{-1})$, while commercial Nafion® NR212 suffered the highest V(IV) 
diffusion $((744 \pm 9) \times 10^{-9} \text{ cm}^2\text{-min}^{-1})$.

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result of this, the order of magnitude of these values has been corrected to $10^{-9}$ cm$^2$·min$^{-1}$ 
from $10^{-8}$ cm$^2$·min$^{-1}$.

4. Materials and Methods

Original:

The dry weight of the membrane ($w_{\text{dry}}$) was obtained after drying it under vacuum 
at 55 °C for 22 h. The weight measurement was carried out in a closed vial to limit the 
uptake of moisture from the air. Then, the weight of the membrane in the wet state ($w_{\text{wet}}$) 
was determined after immersion for 2 days in deionized water or in 1.6 M vanadium in 
2 M H$_2$SO$_4$ and 0.05 M H$_3$PO$_4$ electrolyte (SOC −50%, 3.5 oxidation state, Oxkem, Reading, 
United Kingdom), followed by the removal of droplets on the surface with a tissue. In this 
case, the wet weight was measured in a vial to reduce the evaporation of water from 
the membrane. Lastly, water and electrolyte uptake of pristine $m$-PBI and of commercial 
membranes NR212 and FAP-450 was calculated according to Equation (1).

\[
\text{Uptake} = \frac{w_{\text{wet}} - w_{\text{dry}}}{w_{\text{dry}}} \times 100\% \quad (1)
\]

Explanation for the correction:

The change described above has been made to be in line with the commonly used 
scientific unit of mass ($m$).

Original:

The measurements were carried out by filling two quartz cuvettes (Hellma Analyt- 
ics, Zumikon, Switzerland) with 2.5 mL of solution from the MgSO$_4$ flask. Each time, 
the measured solution was transferred back to the VOSO$_4$ flask to avoid significant 
volume changes.

To be replaced with:

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ics, Zumikon, Switzerland) with 2.5 mL of solution from the MgSO$_4$ flask. Each time, 
the measured solution was transferred back to the MgSO$_4$ flask to avoid significant 
volume changes.

Explanation for the correction:

The correction described above has been made as the measured solutions were trans- 
ferred back into the MgSO$_4$ flask and not the VOSO$_4$ flask.
Lastly, the change in weight (Δw) was calculated according to Equation (4). In Equation (4), \( w_i \) and \( w_f \) are the initial and final weight, respectively.

\[
\Delta w = \frac{w_f - w_i}{w_i} \cdot 100\% \quad (4)
\]

To be replaced with:

Lastly, the change in weight (Δm) was calculated according to Equation (4). In Equation (4), \( m_i \) and \( m_f \) are the initial and final weight, respectively.

\[
\Delta m = \frac{m_f - m_i}{m_i} \cdot 100\% \quad (4)
\]

Explanation for the correction:
The change described above has been made to be in line with the commonly used scientific unit of mass (m).

Original:
Efficiencies and discharge capacity are calculated according to Equations (5)–(8). In Equations (5)–(7), \( Q_{ch} \) and \( Q_{dis} \) are the charges for the discharge and the charge process, while \( V_{dis} \) and \( V_{ch} \) are the discharge and charge volumes. In Equation (8), \( Q_{theoretical} \) is the theoretical charge, \( n \) is the number of moles, \( F \) is the Faraday constant (96,485 C·mol\(^{-1}\)), and \( z \) is the charge.

\[
\eta_C = \frac{Q_{dis}}{Q_{ch}} \cdot 100\% \quad (5)
\]

\[
\eta_V = \frac{V_{dis}}{V_{ch}} \cdot 100\% \quad (6)
\]

\[
\eta_E = (\eta_C \cdot \eta_V) \cdot 100\% \quad (7)
\]

\[
Q_{theoretical} = I \cdot t = n \cdot (F \cdot z) \quad (8)
\]

To be replaced with:
Efficiencies and discharge capacity are calculated according to Equations (5)–(8). In Equations (5)–(7), \( Q_{ch} \) and \( Q_{dis} \) are the charges for the discharge and the charge process, while \( \overline{U}_{ch} \) and \( \overline{U}_{dis} \) are the average voltages during charge and discharge, respectively. In Equation (8), \( Q_{theoretical} \) is the theoretical charge, \( n \) is the number of moles, \( F \) is the Faraday constant (96,485 C·mol\(^{-1}\)), and \( z \) is the number of electrons associated with the electrochemical reaction.

\[
\eta_C = \frac{Q_{dis}}{Q_{ch}} \cdot 100\% \quad (5)
\]

\[
\eta_V = \frac{\overline{U}_{dis}}{\overline{U}_{ch}} \cdot 100\% \quad (6)
\]

\[
\eta_E = (\eta_C \cdot \eta_V) \cdot 100\% \quad (7)
\]

\[
Q_{theoretical} = I \cdot t = n \cdot (F \cdot z) \quad (8)
\]

Explanation for the correction:
The changes described above were made to avoid confusion between the average voltages in the cell (\( \overline{U} \)) and the unit volt (V). Furthermore, the description of this symbol was corrected to the average voltage instead of volume, which was a typing mistake. The last change was made to provide a clearer description of the symbol \( z \) as "charge" did not provide the desired clarity.
5. Conclusions

Original:
This asymmetric composite membrane showed the lowest V(IV) diffusivity ((14 ± 1) × 10⁻⁹ cm²·min⁻¹) as compared to the commercial Nafion® NR212 and Fumasep® FAP-450, (744 ± 9) × 10⁻⁸ and (351 ± 1) × 10⁻⁸ cm²·min⁻¹, respectively.

To be replaced with:
This asymmetric composite membrane showed the lowest V(IV) diffusivity ((14 ± 1) × 10⁻⁹ cm²·min⁻¹) as compared to the commercial Nafion® NR212 and Fumasep® FAP-450, (744 ± 9) × 10⁻⁹ and (351 ± 1) × 10⁻⁹ cm²·min⁻¹, respectively.

Explanation for the correction:
We observed an error in the calculations of the vanadium (IV) diffusion values; as a result of this, the order of magnitude of these values has been corrected to 10⁻⁹ cm²·min⁻¹ from 10⁻⁸ cm²·min⁻¹.
The authors apologize for any inconvenience caused and state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. The original publication has also been updated.

Reference
1. Duburg, J.C.; Azizi, K.; Primdahl, S.; Hjuler, H.A.; Zanzola, E.; Schmidt, T.J.; Gubler, L. Composite Polybenzimidazole Membrane with High Capacity Retention for Vanadium Redox Flow Batteries. *Molecules* 2021, 26, 1679. [CrossRef] [PubMed]