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Erratum

Erratum to: Electrokinetic Onsager coefficients and energy conversion in deformable nanofluidic channels*

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The original published article contains some errors which are corrected below.

– Section 1, paragraph 2 is replaced by:

"...where the L_{ij}'s are called the Onsager phenomenological transport coefficients. Here, L_{11} is proportional to the permeability of the porous medium, L_{22} corresponds to the effective electric conductivity, and L_{21} and L_{12} are the coefficients for the streaming current and the electroosmotic flow, respectively. Note that the above formulation assumes a vanishing concentration of co-ions, which is the case that this contribution focuses on."

– Equation (17) is replaced by

$$\begin{pmatrix} Q \\ I \end{pmatrix} = \begin{pmatrix} \mu_{\mathrm{hyd}} & \mu_{\mathrm{osm}} \\ \mu_{\mathrm{str}} & \mu_{\mathrm{ele}} \end{pmatrix} \begin{pmatrix} -\nabla \bar{p} \\ \bar{E}_z \end{pmatrix} . \tag{17}$$

– Equations (21) and (22) are replaced, respectively, by

$$\mu_{\mathrm{osm}} = \frac{R_0^3 \sigma_0}{4\nu} \left\{ \tilde{a}^{(3-\alpha)/2} \left[1 - \xi_u(\tilde{a}) \right] \right\} . \tag{21}$$

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$$\mu_{\rm str} = \begin{cases} \mu_{\rm osm}\ , & \text{rigid channel.} \\ \mu_{\rm osm} + \dfrac{R_0^3\sigma_0}{4\nu} \left\{ \dfrac{\mathcal{K}_{\rm diff}\left[2\kappa\sqrt{\tilde{a}} + \tilde{a}^{\alpha/2}(1+\alpha)\right]\tilde{a}^{1-\alpha}}{\mathcal{K}_Y + \mathcal{K}_{\rm osm}\left[2\sqrt{\tilde{a}} + \tilde{a}^{\alpha/2}(1+\alpha)\right]} \right\}, & \text{deformed channel.} \end{cases} \tag{22}$$

– Equations (26) and (27) are replaced, respectively, by

$$\bar{E}_{\rm max} = \frac{\mu_{\rm str}}{2\mu_{\rm ele}} \nabla\bar{p}\ , \tag{26}$$

$$\nabla\bar{p}_{\rm max} = \frac{\mu_{\rm osm}}{2\mu_{\rm hyd}} \bar{E}_z\ . \tag{27}$$

– Equations (29) and (30) are replaced, respectively, by

$$\bar{E}_{\rm max} = \frac{\mu_{\rm hyd}}{\mu_{\rm osm}} \left(1 - \sqrt{1-\beta}\right) \nabla\bar{p}\ , \tag{29}$$

$$\nabla\bar{p}_{\rm max} = \frac{\mu_{\rm ele}}{\mu_{\rm str}} \left(1 - \sqrt{1-\beta}\right) \bar{E}_z\ . \tag{30}$$

– Section 3.2.1, paragraph 2 is replaced by:

"...where $\beta = (\mu_{\rm str}/\mu_{\rm ele}) \times (\mu_{\rm osm}/\mu_{\rm hyd})$ and $\chi_0 = \mu_{\rm str}/\mu_{\rm osm}$. The dimensionless parameter β is a cross-correlation coefficient, usually called the 'figure of merit' [34,35], and can be described as the product of the streaming current effect and the electro-osmotic effect. The coefficient χ_0 measures the symmetry of the Onsager coefficient matrix $[\boldsymbol{\mu}]$, and it assumes a value of 1 for rigid channels."