Effects of Electrodouble Layer (EDL) and Surface Roughness on Lubrication Theory

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Following are updates to Eq. 7c, Fig. 2b, and Figs. 3a and b, due to an error found in the derivation in the original article:

The correct coefficient in Eq. (7c) is $A'_3 = 6 + \frac{2\eta_e \kappa h (\cosh \kappa h - 1)^2}{\eta \sinh^3 \kappa h}$. The expressions of coefficients g_x (Eq. 6b), pressure flow factors ϕ_{xx}^p (Eq. 4a), and ϕ_{yy}^p (Eq. 4b), and shear flow factors ϕ_{xx}^p (Eq. 4e) and ϕ_{yy}^p (Eq. 4f) are correct in the original article. However, they all are related to A'_3 ; therefore, the calculated value should be corrected along with the correction of A'_3 .

Fig. 2b

The online version of the original article can be found under doi:
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Fig. 3a, b