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Erratum: "Thermocapillary Effect of a Liquid Plug in Transient Temperature Fields" [Jpn. J. Appl. Phys. 44 (2005) 1139]

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In our paper,[1] eq. (1) describing the one-dimensional heat transfer in a glass capillary was not correct. For a hollow capillary with an inner radius of R and an outer radius of R_o, the correct equation reads:

$$\frac{\partial T}{\partial t} = \alpha \frac{\partial^2 T}{\partial x^2} - \frac{2hR_o}{\rho c(R_o^2 - R^2)} T,$$

Consequently, the variable β should be:

$$\beta = \sqrt{\frac{2hL_c^2 R_o}{k(R_o^2 - R^2)}},$$

Following are typo errors in the published paper. Equation (3) should read:

$$\frac{\partial T^*}{\partial t^*} = \frac{\partial^2 T^*}{\partial x^{*2}} - \beta^2 T^*$$

Equation (10) should read:

$$\rho\pi R^2 L \frac{\mathrm{d}^2 x}{\mathrm{d}t^2} = -8\pi\mu L \frac{\mathrm{d}x}{\mathrm{d}t} - 2\pi R[\sigma_{lg}(x + L)\cos\theta_a - \sigma_{lg}(x)\cos\theta_r],$$

The variable B should read:

$$B = \frac{2}{\rho RL}[\sigma_{lg}(x)\cos\theta_r - \sigma_{lg}(x + L)\cos\theta_a],$$

Since the values of β is in the same order as it was calculated with the previously published equation. The qualitative theoretical results in Figs. 5 to 8 are still valid.

1) N.-T. Nguyen and X. Huang: Jpn. J. Appl. Phys. **44** (2005) 1139.

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