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Temperature Profiles and Heat Dissipation in Capillary Electrophoresis

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Temperature Profiles and Heat Dissipation in Capillary Electrophoresis

Christopher J. Evanhuis, Rosanne M. Guijt, Miroslav Macka,* Phillip J. Marriott, and Paul R. Haddad

(Anal. Chem. 2006, 78, 2684–2693).

An error was present in eq 6 for the calculation of T_{mean} . This had effects on values in Table 1 and Figure 6. To correctly calculate the mean temperature in the electrolyte, it is necessary to take into account the changing contribution of the cross-sectional area with the varying radial position. Integrating $\Delta T \cdot 2\pi r$ dr between 0 and r_i and dividing the result by πr_i^2 leads to eq 1.

$$T_{\text{mean}} - T_{\text{wall}} = \frac{1}{2} (T_{\text{axis}} - T_{\text{wall}}) = \frac{1}{2} \Delta T_{\text{radial}} \quad (1)$$

The corrected versions of eq 7 and eq 8 are

$$T_{\text{wall}} = T_{\text{mean}} - \frac{1}{2} \Delta T_{\text{radial}} \quad (7)$$

$$T_{\text{axis}} = T_{\text{mean}} + \frac{1}{2} \Delta T_{\text{radial}} \quad (8)$$

Corrected versions of Table 1 and Figure 6 are available in the Supporting Information.

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