ELSEVIER

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Reply

Linear radial growth velocity of isolated spherulites in polymer free solidification [*Polymer* 1994, **35**, 5434]

Dear Sir

In reply to the previous letter by Dr D. S. Ross[1], the scales and labels on *Figure 6* should read as below. The labels and conditions for the curves are: 3, $T_0 = 133.2°C$, $V = 0.038\,\mu m\ s^{-1}$; 4, $T_0 = 130°C$, $V = 0.0725\,\mu m\ s^{-1}$.

The definition of the exponential integral function in equation (10) should read:

$$\mathrm{Ei}(-p) = -\int_p^\infty \frac{\exp(-x)}{x}\mathrm{d}x \tag{11}$$

and its series expansion is:

$$\mathrm{Ei}(x) = \gamma + \ln x + \sum_{n=1}^{\infty} \frac{x^n}{nn!} \tag{12}$$

Using the correct definition, the results of temperature rise as a function of time in equation (10) are shown as the solid curves in *Figures 8* and *9*. The dashed curves in *Figures 8* and *9* show the original results, using the incorrect definition of Ei.

We should mention that:

1. The quasi-stationary approximation solution, equation (10), is valid for Peclet number, $p = VR/a < 0.01$, i.e. $R = 10–100\,\mu m$, $V < 0.1\,\mu m\,s^{-1}$, for most polymer cases.
2. When $p = VR/a < 0.01$, the use of the original definition of Ei and the above definition of exponential integral function gives very similar results, differing by less than 1%.
3. When $p = VR/a > 0.01$, the errors are larger. For example, in *Figure 8*, the worst case for PEO is for $t = 250$ s (curve 5), the relative error is 32%; in *Figure 9*, the worst case for iPP is for $t = 10\,000$ s (curve 5), the relative error is 7%.

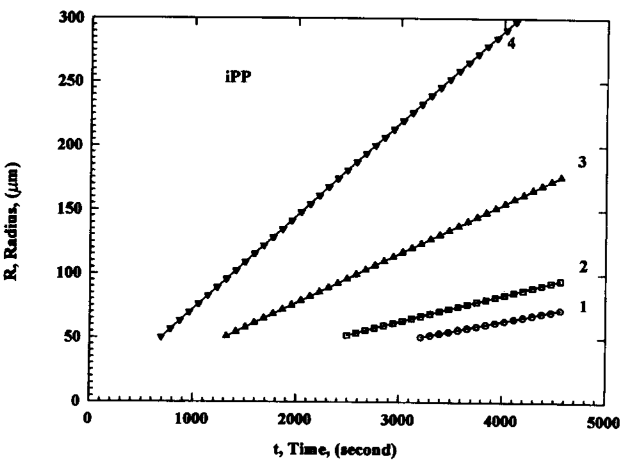

Figure 6

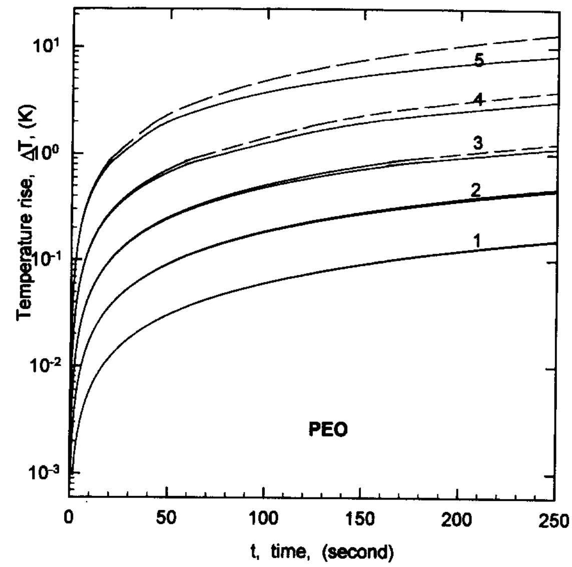

Figure 8

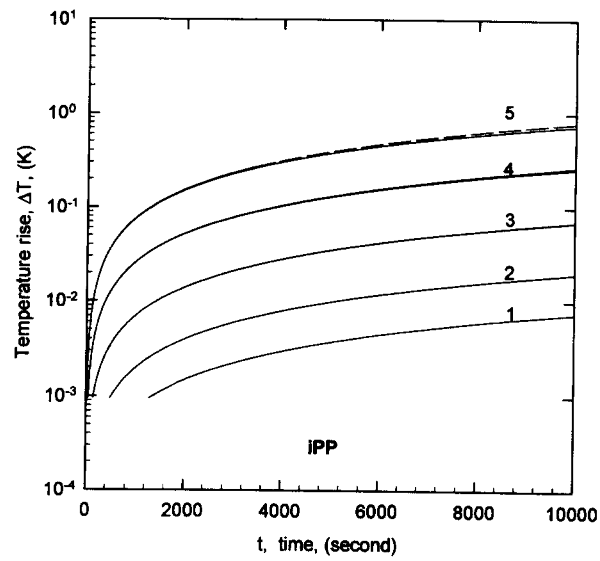

Figure 9

We thank Dr D. S. Ross for pointing out these errors.

REFERENCE

1 Ross, D. S. *Polymer* 1996, 37, 3775

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