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Correction: Nonlinear rheology of entangled polymers at turning point

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Correction for 'Nonlinear rheology of entangled polymers at turning point' by Shi-Qing Wang *et al.*, *Soft Matter*, 2015, **11**, 1454–1458.

This correction note acknowledges that the withdrawal of four articles^{1–4} has affected some statements made in ref. 5. Specifically, in the last paragraph of Section IV of ref. 5, the results of ref. 2 were applied to make an incorrect statement that there should be a chain stretching contribution to the macroscopic stress even for rates lower than the Rouse rate (*i.e.*, $Wi_R \ll 1$). The paragraph continued by repeating the erroneous conclusions from ref. 2 that (a) the shear stress overshoot originates from retraction of stretched chains on time scales longer than the Rouse time and (b) such a molecular dynamics simulation result does not support the tube model's premise that chain retraction occurs inside a tube on Rouse time.

To dispel any plausible confusion in the literature, we make a short comment. Although the contour length may be at its equilibrium value on the tube segment scale either during startup shear with $Wi_R < 1$ or after relaxation for a period as long as the Rouse time from fast ($Wi_R \gg 1$) step strain, there is no reason that the stress can still be calculated based on tube segmental orientation. The molecular mechanism for stress overshoot during startup shear with $Wi_R < 1$ remains an open question.

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

References

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