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Correction: High-melting-point crystals of poly(L-lactic acid) (PLLA): the most efficient nucleating agent to enhance the crystallization of PLLA

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Correction for 'High-melting-point crystals of poly(L-lactic acid) (PLLA): the most efficient nucleating agent to enhance the crystallization of PLLA' by Hai-Yan Yin *et al.*, *CrystEngComm*, 2015, 17, 2310–2320.

We reported that high-melting-point crystals of PLLA and PDLA can act as efficient nucleating agents to enhance the crystallization of PLLA in our previous publications (*ACS Sustainable Chem. Eng.*, 2015, 3, 654–661; *CrystEngComm*, 2015, 17, 2310–2320; *CrystEngComm*, 2015, 17, 4334–4342), and a possible nucleation process was shown in Fig. 10 of the article *CrystEngComm*, 2015, 17, 2310–2320.

Inspired by the work conducted by Wittmann, Lotz *et al.*,^{1,2} who introduced the polymer decoration technique, we now think that the nucleation *via* a template of the fold surfaces we proposed and the drawing we made are misleading.

The following corrections to the published version of *CrystEngComm*, 2015, 17, 2310–2320 are required:

(1) Fig. 10 and its caption on page 2318 should be:

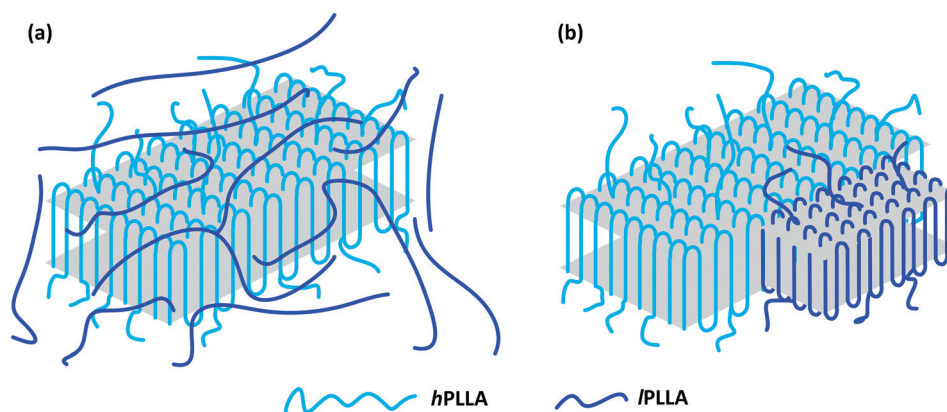


Fig. 10 Schematic representation of the crystallization process of *l*PLLA in the presence of *h*PLLA crystallites. (a) Well dispersed *h*PLLA crystallites in the molten *l*PLLA matrix. (b) Nucleation by the lateral crystalline, growth edges of the *h*PLLA crystallites, and lamellae of *l*PLLA form rapidly.

(2) The last paragraph of the “Results and discussion” section on page 2318 and 2319 should be:

Based on the above discussion, it is clear that owing to the similarity of crystal structure between the α -form *h*PLLA crystallites and *l*PLLA, nucleation can be induced by the lateral crystalline growth edges of the *h*PLLA crystallites. As is known, for polymer crystals, the chains are partially crystalline and partially amorphous. It has been established that *l*PLLA and *h*PLLA chains are completely miscible due to their identical chemical composition. Therefore, as shown in Fig. 10a, *h*PLLA crystallites

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are well dispersed in the molten *l*PLLA matrix before crystallization. Owing to the same crystal structure, the *l*PLLA matrix finds a crystalline substrate that is exactly the one it wants to make. The *l*PLLA chains deposit on the growth front of the *h*PLLA crystallites, and nucleation is induced by the lateral crystalline, growth edges of the *h*PLLA crystallites. Then lamellae of *l*PLLA form rapidly (as shown in Fig. 10b). During this surface induced crystallization process, the complete miscibility *i.e.*, a strong interfacial interaction, between the amorphous chains of the *h*PLLA crystallites and *l*PLLA matrix, and the identical crystal structure between the α -form *h*PLLA crystallites and *l*PLLA matrix sharply reduce the energy barrier for heterogeneous nucleation.

The authors would like to apologize for this oversight and for any confusion that has arisen as a result.

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

References

- 1 J. C. Wittmann and B. Lotz, *J. Polym. Sci., Part B: Polym. Phys.*, 1985, **23**, 205–226.
- 2 J. H. Chen, S. Z. D. Cheng, S. S. Wu, B. Lotz and J. C. Wittmann, *J. Polym. Sci., Part B: Polym. Phys.*, 1995, **33**, 1851–1855.

