Supplementary Information

Insight into the role of bound water of nucleating agent in polymer nucleation: A comparative study of anhydrous and monohydrated orotic acid on crystallization of poly(L-lactic acid)

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Figure Captions

Fig. S1 (A) DSC melting endotherm of pure PLLA after crystallization at a cooling rate of 1°C/min from complete-melting state. The dashed lines indicate the partial melting zone used in self-nucleation experiment. Domains I, II, and III refer to complete melting, self-nucleation, and incomplete melting (annealing), respectively. The heating rate is 10°C/min. (B) DSC thermograms of the self-nucleation experiment conducted on pure PLLA. Curves (a), (b), (c), and (d) are recorded during the cooling scans after thermal conditioning at the partial melting temperatures of 165°C, 166°C, 168°C, and 170°C for 5min, respectively. Curve (e) is obtained during the cooling scan after complete melting at 200°C for 3min. Crystallization peak temperature (T_c) is indicated below each curve. All the cooling rates are 1°C/min.

Fig. S2 DSC thermograms of nonisothermal melt crystallization for PLLA/OA blends at the cooling rate of 1°C/min. Crystallization peak temperature (T_{cNA}) is indicated below each curve.

Fig. S3 Time-resolved FTIR spectra of pure PLLA isothermally melt-crystallized at 140°C. The spectra are stacked every 15min.

Fig. S4 Histograms for particle size distribution of (a) OA-a and (b) OA-m in the PLLA melt. The particle size was measured by analysis software of POM.

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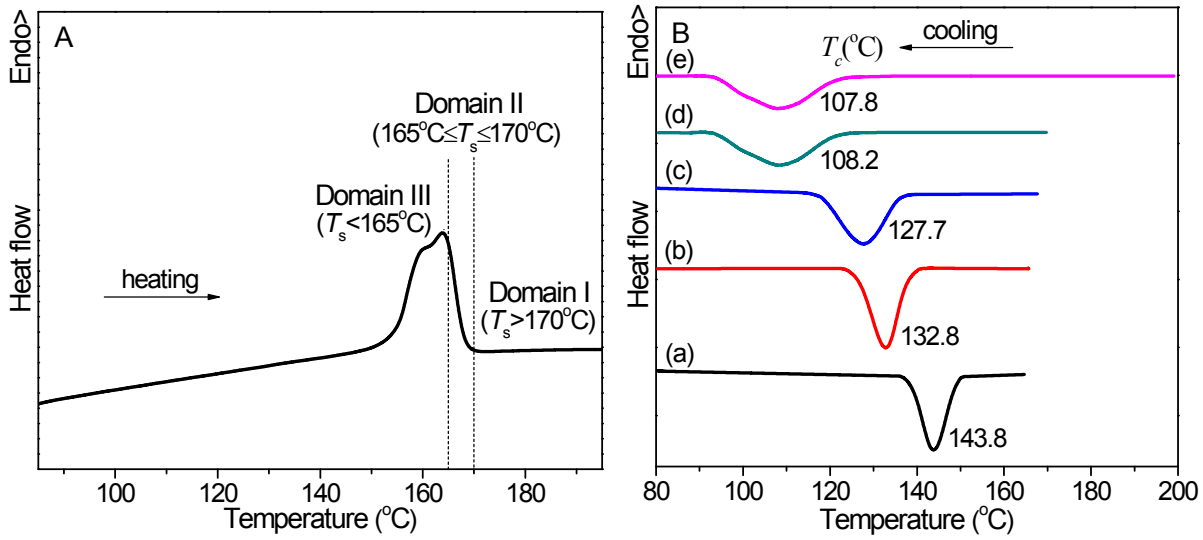

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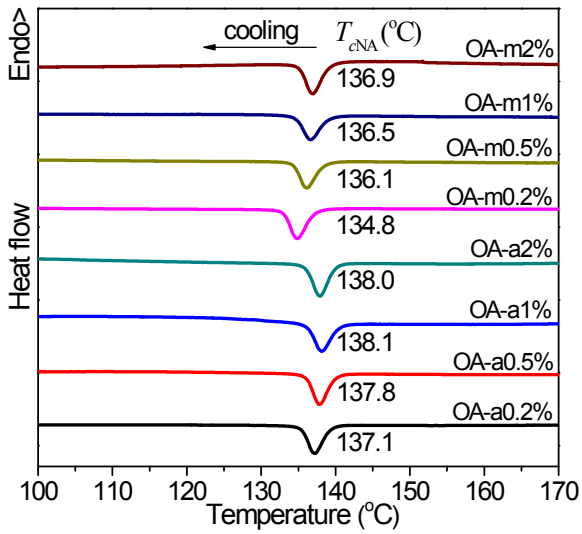

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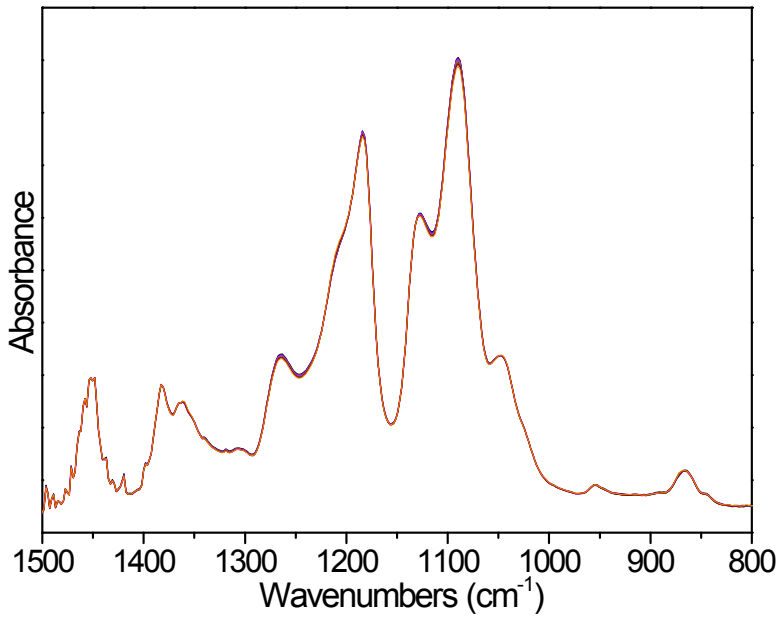

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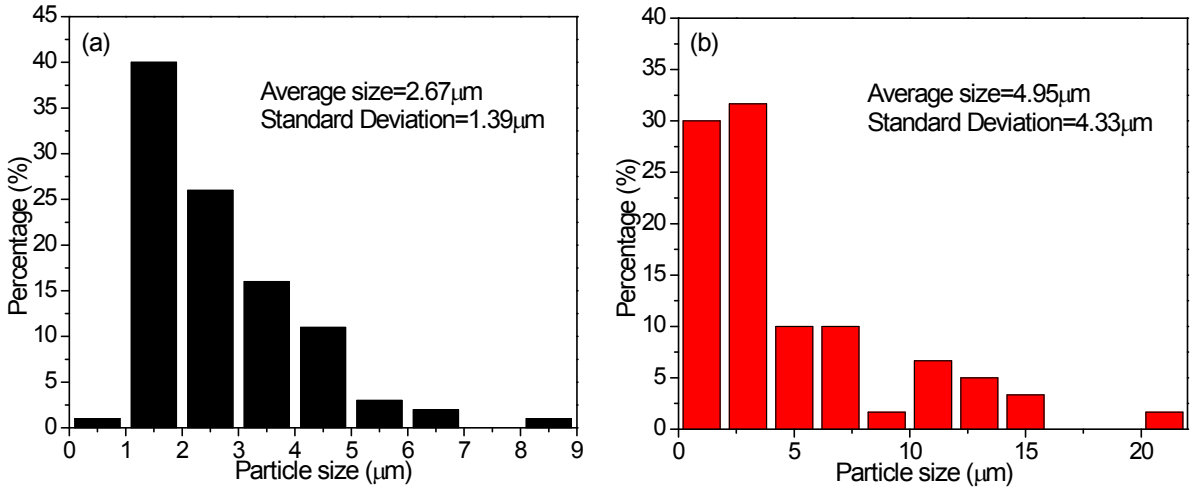

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