Supporting Information (Figure S1, S2, S3, S4, S5)

Composite Banded Core and Non-banded Shell Transition Patterns in Stereocomplexed Poly(lactide acid) Induced by Strongly Interacting Poly(p-vinyl phenol)

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Figure S1. POM and OM images showing the crystalline morphology of sc-PLA/PVPh (80/20) blend at various crystallization temperatures ($T_c$).
(a) sc-PLA/PVPh (95/5) 240°C-1min-\(T_c\)

(b) sc-PLA/PVPh (90/10) 240°C-1min-\(T_c\)

**Figure S2.** Crystalline morphology of (a) sc-PLA/PVPh (95/5) and (b) sc-PLA/PVPh (90/10) blends at various crystallization temperatures (\(T_c\)).

**Figure S3.** Scheme of whole spherulite and AFM micrograph of (IV) inter-lamellar junction in non-banded peripheral region of the spherulite. [Regions-I, II, III are discussed in the main texts.]
Figure S4. FTIR spectra in hydroxyl-stretching region for (PLLA/PDLA)/PVPh blend of various compositions as indicated on traces.

**sc-PLA/PVPh (70/30) 240°C-\(t_{\text{max}}\)-170°C**

![Images showing crystalline morphology](image)

Figure S5. The crystalline morphology of sc-PLA/PVPh (70/30) blend at \(T_c=170^\circ\text{C}\) and various \(t_{\text{max}}\).

The results in Fig. S5 indicate that the time held at \(T_{\text{max}}=240^\circ\text{C}\) (1, 3, 5 min, respectively) significantly influences the spherulite morphology. For short \(t_{\text{max}}\) (1 min), the spherulite assumes a morphology of ring-banded core superimposed on dendritic lamellae, while for \(t_{\text{max}}\) increased to 3 and 5 min, respectively, the ring-band pattern in the central core entirely disappears and the dendritic patterns further intensify to flower-petal shapes.