Electronic Supplementary Materials (ESI) for New Journal of Chemistry.
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Supplementary Information

Electrospun porous PLLA and poly(LLA-co-CL) fibers by phase separation

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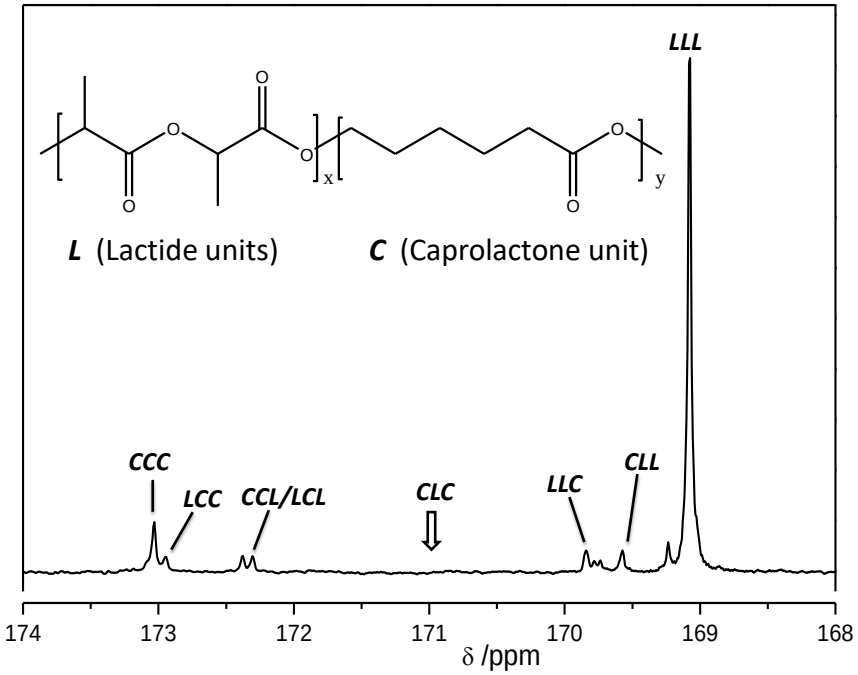

Figure S1. ^{13}C NMR spectrum of the copolymer PLC70/30.

In the ^{13}C NMR spectrum, the carbonyl carbon (C=O) characteristic peaks between 174 and 168 ppm range were sensitive to copolymer sequences. Therefore, the qualitative and quantitative analysis of the length was applied of this characteristic peak zone, which has become a common method in the field. For convenience, **C** represented the structural unit of caprolactam, **L** represented the structural unit of lactide. As seen in Figure 1, there were many carbonyl signals of new structure characteristic peaks between **C** and **L**. Referencing the reported literature, [1] we had assigned these characteristic peaks according to the sequence structure, and the results were shown in Table S1.

Table S1 Peaks assignment of ^{13}C NMR spectra of the PLC70/30 copolymers.

δ, ppm	triad (s)
173.35	C-C-C
173.28	L-C-C
172.71	C-C-L
172.64	L-C-L
170.70	C-L-C
170.19	L-L-C
169.92	C-L-L
169.43	L-L-L

The small peaks at 170.70 ppm corresponding to the **C-L-C** sequence structure implied the presence of an ester exchange reaction during the copolymerization. As for the copolymers of LA and ε-CL, carbonyl signals between 174 and 168 ppm had been widely used in calculation of average length of LA sequence (L_L) and CL sequence (L_C). The average lengths of LA and CL sequences of copolymer had been calculated from equation (i) and (ii), and the results were $L_L \approx 4.1$ and $L_C \approx 1.6$, respectively.[2]

$$L_{LA} = \frac{1}{2}\left[\frac{I_{LLL}+(I_{LLC}+I_{CLL})/2}{(I_{LLC}+I_{CLL})/2 + I_{CLC}} + 1\right] \quad \text{(i)}$$

$$L_{CL} = \frac{I_{CCC}+I_{LCC}}{I_{CCL}+I_{LCL}} + 1 \quad \text{(ii)}$$

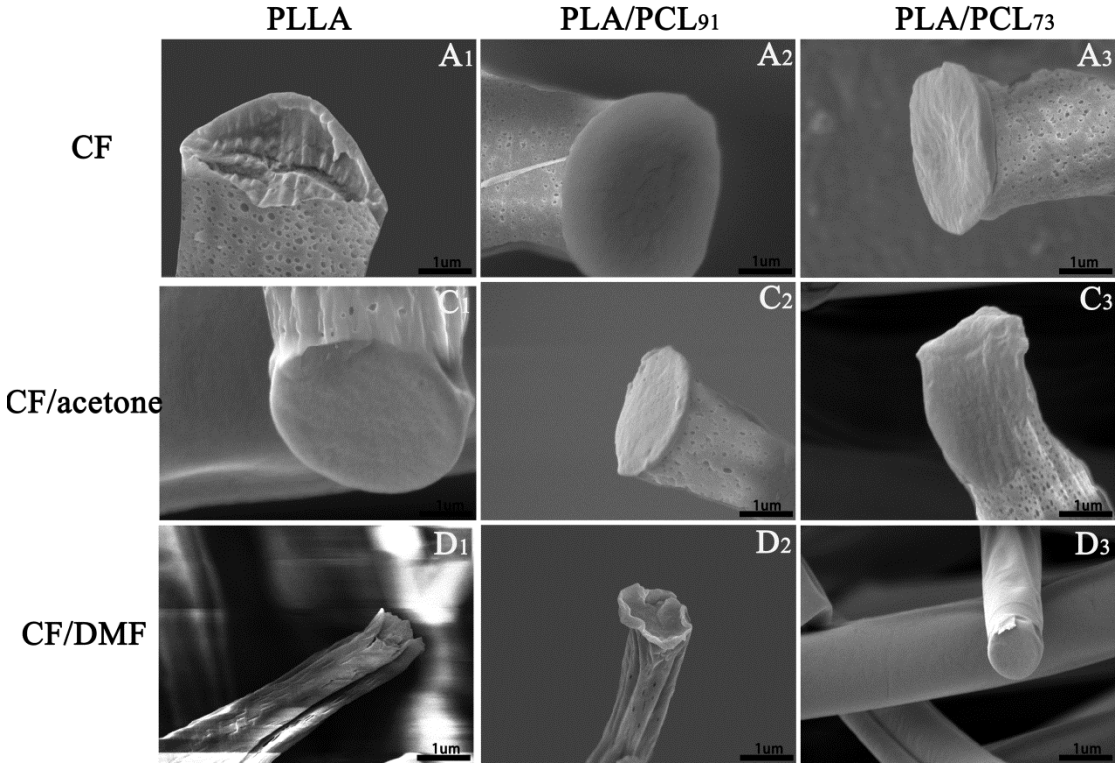

Fig. S2 SEM images of the cross-section for electrospun fibers.

References:

[1] Vanhoorne P, Dubois P, Jerome R. *Macromolecules*, 1992, 25: 37–44.
[2] Maruta Y, Abiko A. *Polym Bull*, 2014, 71: 989–999.