Mechanisms and Control of Silk-based Electrospinning

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Supporting Information

Size distribution of SF particles in aqueous solution and formic acid. The results showed that different nanostructures were formed in various solutions. The size distribution was consistent with the AFM results, confirming the formation of different nanostructures in solution.

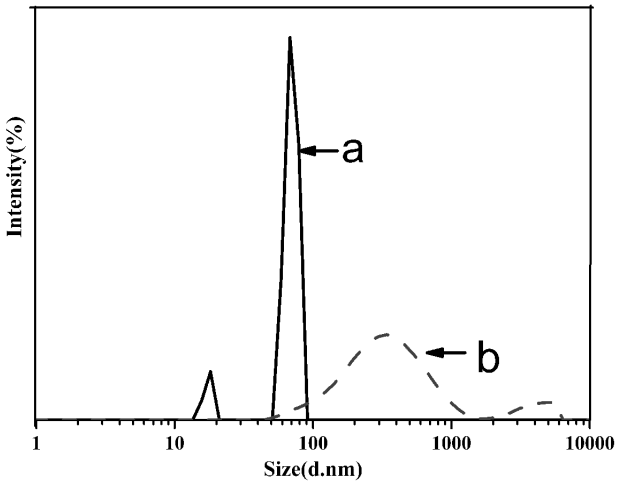

Figure S1. Size distribution of silk fibroin after different treatments: (a) fresh silk fibroin solution; (b) sample (a) slowly concentrated to 25 wt% at room temperature, the drying time was about 4 days. All the samples were diluted to 0.1wt% to facilitate the DLS measurement.

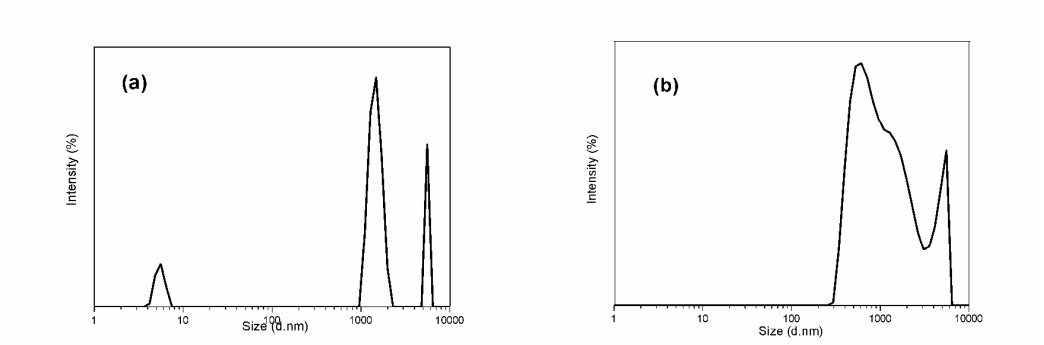

Figure S2. Size distribution of SF particles in formic acid. (a) the solution was derived from silk fibroin films prepared by fast drying method, (b) the solution was derived from silk fibroin films prepared by slow drying method.

FTIR spectra of regenerated silk films. The FTIR spectra results showed that the regenerated SF films prepared by fast and slow drying methods are mainly composed of random coil and or silk Ⅰconformation rather than rich silk II content although nanospheres or nanofibibers formed in the films.

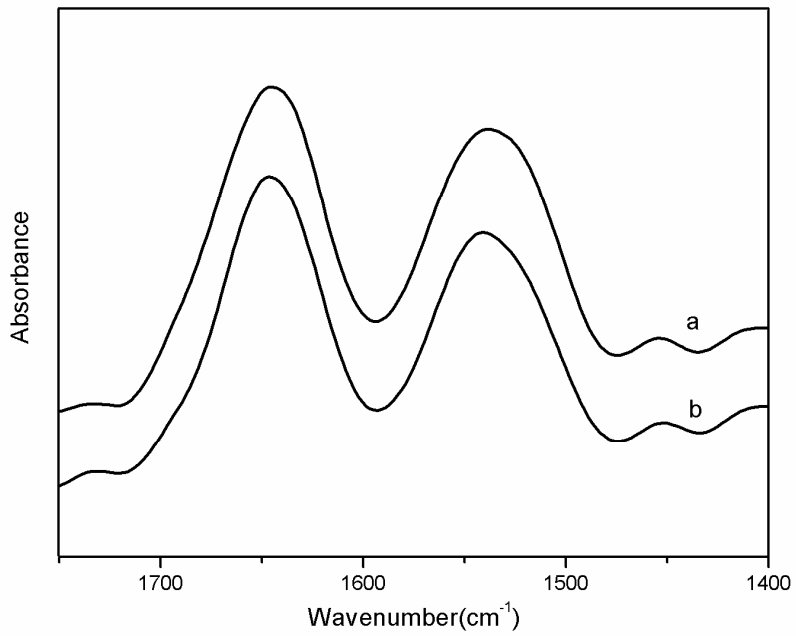

Figure S3. FTIR spectra of silk films prepared by fast drying method (a) and slow drying method (b)