Figure S2 XRD spectra of Ph-LPSQ/C_{12}-PA powder (a) and fiber (b).

X-ray diffraction (XRD) was performed on a Rigaku D/max 2400 diffractometer with Cu Kα radiation. XRD spectra of Ph-LPSQ/C_{12}-PA powder and fiber display two distinct peaks at 2θ = 7.25° and 18.3° corresponding to the molecular simulated ladder width \( w = 1.22 \) nm and the ladder thickness \( t = 0.49 \) nm of Ph-LPSQ, respectively. But the signals
associated with the C_{12}-PA haven’t been detected. So the C_{12}-PA is amorphous. The same results are observed for the other Ph-LPSQ/C_{n}-PA powder and fiber.

Figure S2 ATR FT-IR spectra in the range of 900-3600 cm⁻¹ of Ph-LPSQ/C_{12}-PA powder (a) and fiber (b).