Supplementary file

Table S1. Diameters of printed filaments with different concentrations of PCA₂ + CNCs

| Concentration | 2.2 wt% CNC | 4.4 wt% CNC | 8.8 wt% CNC |
|---------------|-------------|-------------|-------------|
| 15 wt% PCA₂   |Collapsed    |0.635±0.057 mm<sup>b</sup> |0.509±0.023 mm |
| 20 wt% PCA₂   |0.863±0.085 mm |0.463±0.020 mm | Jammed |

<sup>a</sup>The bore diameter of nozzle was 0.41 mm;
<sup>b</sup>The number of parallel filaments: n=5.

Figure S1. The optical microscopic image of PCA2 without CNCs printed object after 20 min of printing.
Figure S2. Degradation profiles of PCA$_2$ hydrogel at 37°C in PBS containing 0.1 mg lipase. $n=3$.

Figure S3. Fluorescent microscopic images of fibroblasts cultured with 20 wt% PCA$_2$+4.4 wt% CNC hydrogel with medium for 12 h.