**Selective near-infrared laser programming for shape memory polymer - carbon nanotube composite material 4D printing**

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**Figure S1. The properties of IBBA-CNT with different content of CNT.** (a) Quasi static tensile test results at room temperature; (b) Quasi-static tensile test results at programming temperature; (c) Experimental results of near-infrared photothermal effect; (d) Combustion of IBBA-CNT with high CNT content under near infrared irradiation; (e) The rheological properties of the precursors.

CNT content has no significant effect on the mechanical properties of IBBA-CNT (Figure R1a-b), but has a significant effect on the photothermal conversion rate (Figure R1c). IBBA-CNT with more than 0.05wt% CNT will rapidly rise to more than 150 ℃ within 7s (Figure R1c). This temperature rise efficiency is too fast to control the programming temperature of SMP. More importantly, as shown in Figure R1d, IBBA-CNT with high CNT content will be ignited by near-infrared laser. Therefore, we chose IBBA-CNT with 0.05wt% CNT.

Increasing CNT content has no effect on the rheological properties of IBBA precursor (Figure R1e).