

### Supplementary information

**Title:** A Novel Radiofrequency-induced Phase Transition Strategy for Shape and Stiffness Switching in Poly(glycerol dodecanoate) polymer

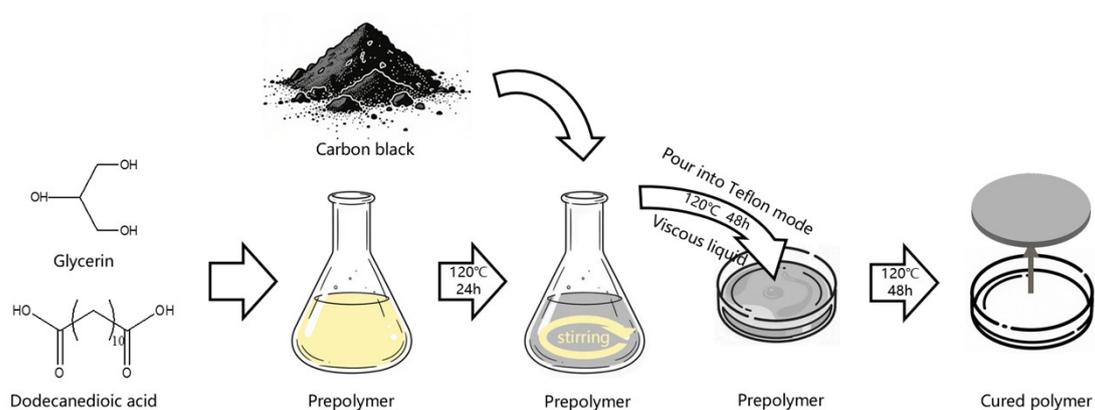


Figure S1. Synthetic processes of PGD+CB polymer.

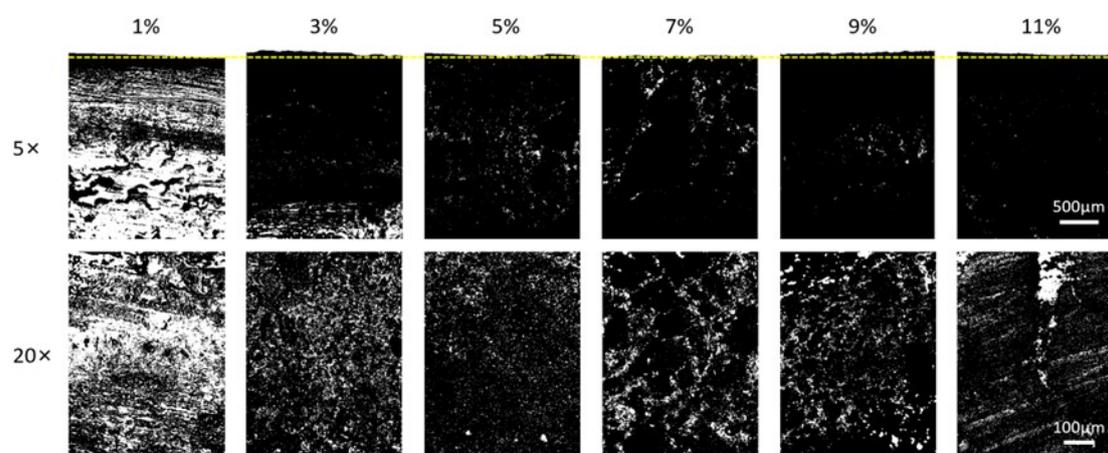


Figure S2. Cross section of the PGD+CB polymers. The black part represents the carbon black in the polymer. The white part represents the PGD polymer itself.

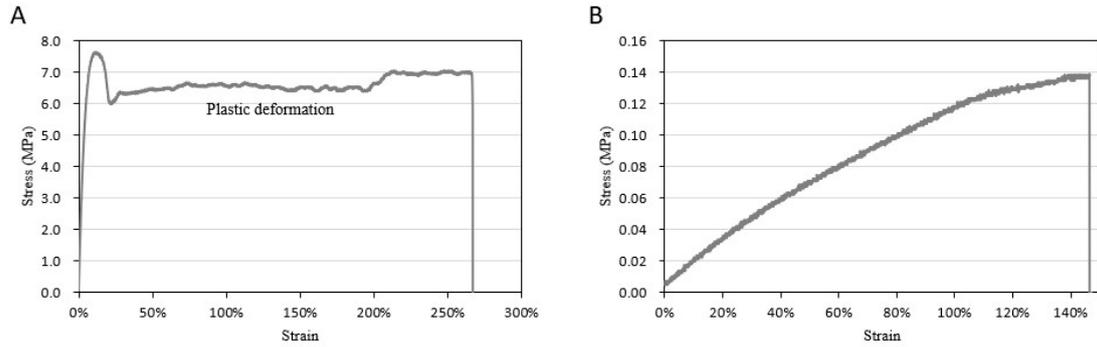


Figure S3. General mechanical properties of PGD+CB polymers. Stress-strain curve of the polymer in (A) glassy state and (B) rubbery state.

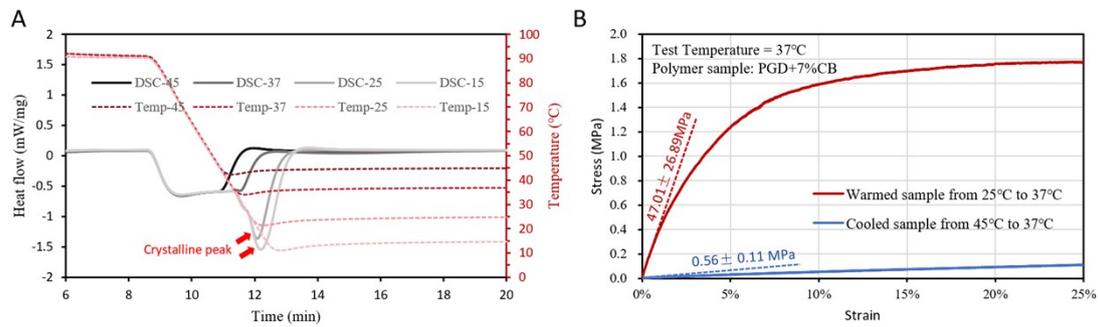


Figure S4. The properties of the PGD+7% CB polymer under different crystalline states. (A) The isothermal crystallization properties of the PGD+7% CB polymer at 45°C, 37 °C, 25 °C and 15 °C. (B) Mechanical properties of the PGD+7% CB polymer with different crystalline states at body temperature.