

## Supporting information

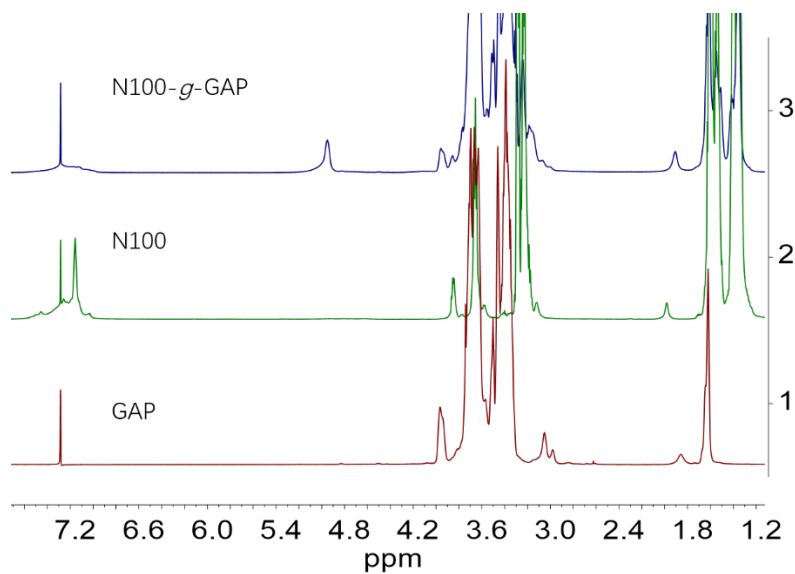


Figure 1.  $^1\text{H}$  NMR analysis of N100-g-GAP, N100, and GAP.

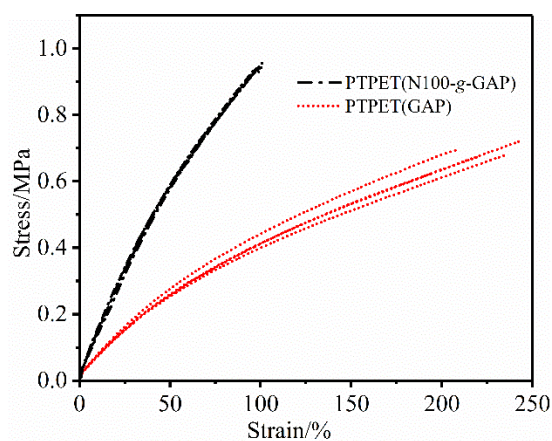


Figure 2. Stress–strain curves of the PTPET elastomer prepared by N100-g-GAP and GAP ( $M_n = 4,000$  g/mol) at 20 °C.

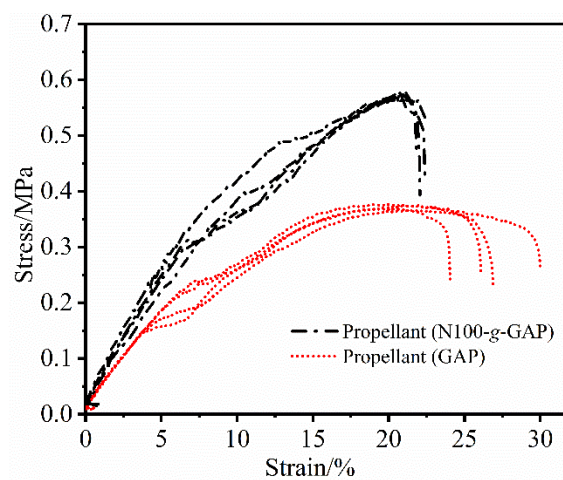


Figure 3. Stress–strain curves of the PTPET propellants prepared by N100-g-GAP and GAP ( $M_n = 4,000$  g/mol) at 20 °C.

