Electronic Supplementary Material (ESI) for Polymer Chemistry.

Autonomous self-healing polyisoprene elastomer with high modulus and good toughness based on synergy of dynamic ionic crosslinks and highly disordered crystals

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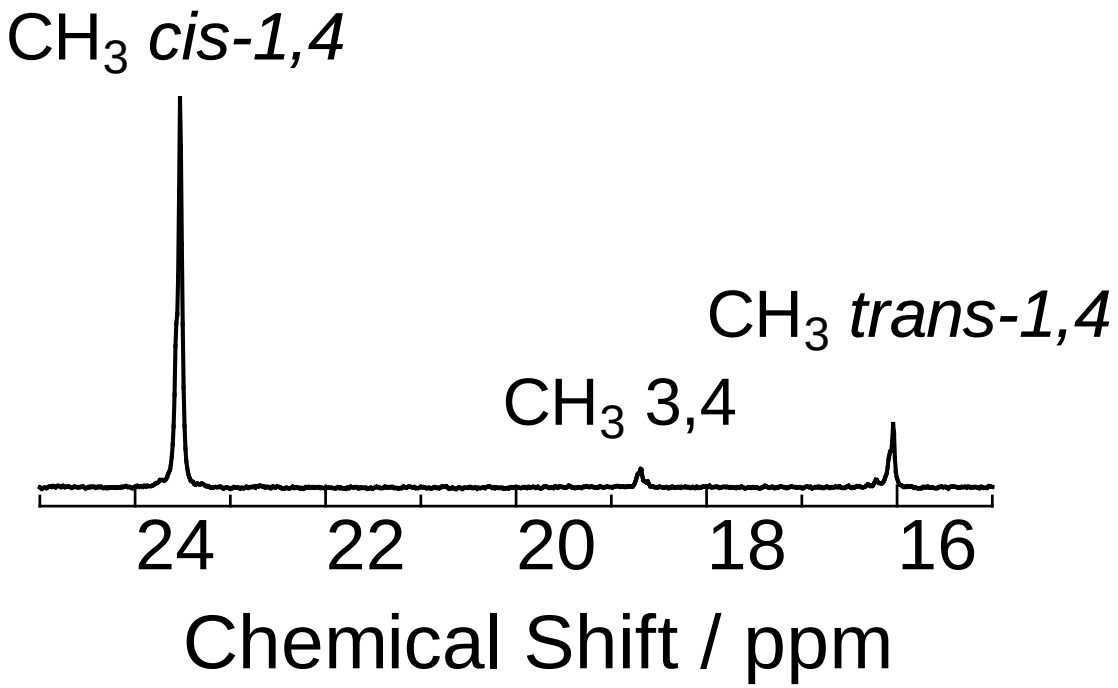

Fig. S1. ^{13}C-NMR spectrum for *cis*-PI used in this work.

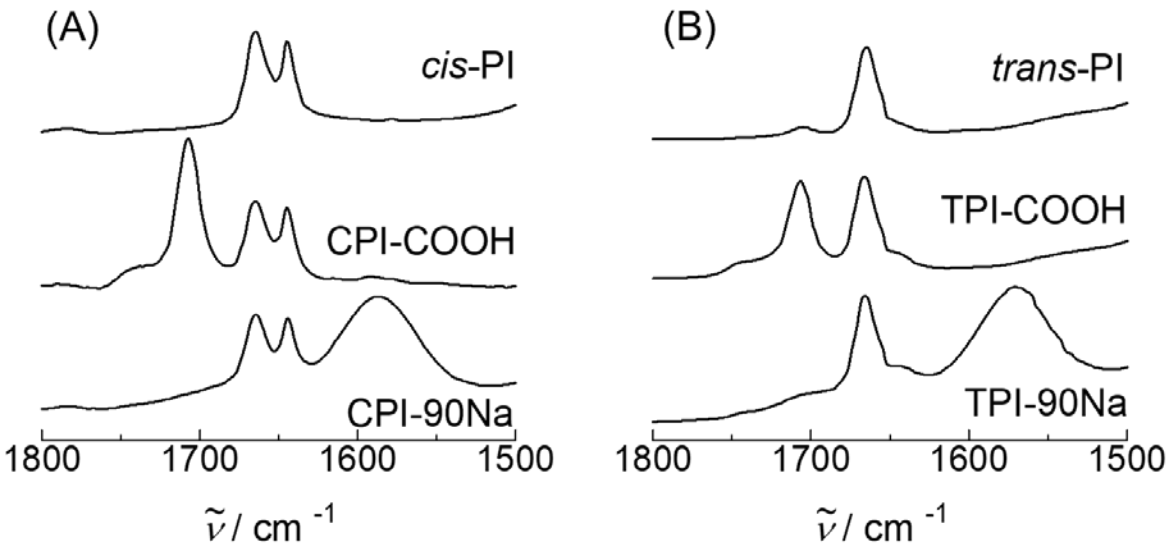

Fig. S2. FT–IR spectra for the indicated samples. Bands at 1708 cm^{-1} and 1585 cm^{-1} are assigned to ν(C=O) of carboxy and $\nu(O-C-O^-)$ of sodium

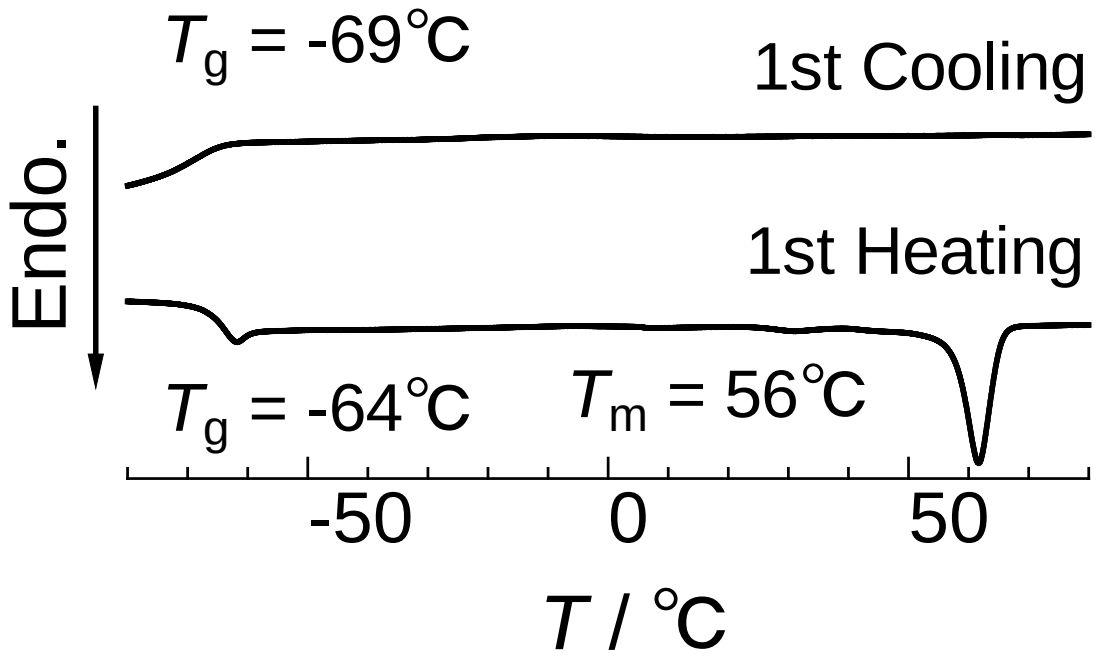

Fig. S3. First heating and first cooling processes of CPI/TPI blend containing 20wt% of TPI.

$$d_p = \frac{\lambda}{2\pi\sqrt{n_1^2 sin^2\theta_1 - n_2^2}} \qquad \text{(S1)}$$

d_p: Penetration Depth

λ: Wavelength of Infrared

θ_1: Incidence Angle (= 45°)

n_1: Refractive Index of Diamond (= 2.42)

n_2: Refractive Index of PI (= 1.51)

Eq. S1. Calculation of penetration depth of infrared rays in the ATR FT–IR measurement