Supporting Information

Flexible and adhesive liquid-free ionic conductive elastomers toward human-machine interaction

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Fig. S1 TGA curve of a PAAm hydrogel.

Fig. S2 Weight retention rate changed by time as the PEEEA ICE stored in an oven at 80 °C.
Fig. S3 Cyclic tensile stress-strain curves of an ICE.

Fig. S4 (a) Molecular structure of MEA, BA, and PEA. (b) Typical tensile stress-strain curves, (c) the summarized fracture strain and fracture stress, (d) initial modulus ($E$), and (e) typical DSC curves of PMEA ICE, PBA ICE, and PPEA ICE.
Fig. S5 Storage modulus ($G'$) and loss modulus ($G''$) changed by frequency for PEEEA polymer without LiTFSI and PEEEA ICE with 0.5% LiTFSI in rheological tests.

Fig. S6 (a) Typical Nyquist plots of PMEA ICE, PBA ICE, and PPEA ICE. (d) The summarized conductivity ($\sigma$) of PMEA ICE, PBA ICE, and PPEA ICE.
**Fig. S7** The relative resistances ($\Delta R/R_0$) changed by stretching (left) and gradually stretching (right) with an increment of 20% strain at each step. The gauge factor (GF) is labelled on the left curve.

**Movie S1** Tapping the TENG on the hand to enter letters.

**Movie S2** Tapping the TENG adhered to the electrical shell to enter letters.