

Hot Topics

Title: Stretchable π -Conjugated Polymer Electrets for Mechanoelectric Generators

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An electret is a polarized material that stably retains an electrostatic charge injected by corona discharge. π -Conjugated polymers wrapped with insulating branched and flexible alkyl chains can interestingly retain electrostatic charge stably. To make the viscoelasticity of the π -conjugated polymer follow the stretchability of the polyurethane elastomer used as the electrode base material, an electrode exhibiting 300% stretchability was constructed by equimolar mixing **P1** and **P2**. A stretchable electret device based on the π -conjugated polymer blend performed a mechanoelectric function that could adapt the frequencies in the range of the human body motion below 50 Hz. In addition, since the device can sustain operation for several months or more without recharging, telemedical systems and healthcare applications can be expected.

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