Electronic Supplementary Information

A flexible viscoelastic coupling cable with self-adapted electrical properties and anti-impact performance toward shapeable electronic devices

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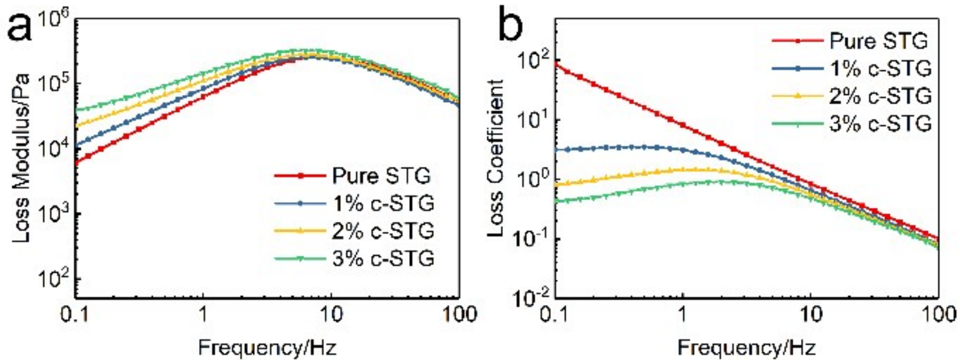

Fig. S1. The loss storage modulus G'' (a) and the loss coefficient δ (b) of STG with the different mass ratios of CNTs, 0 wt%, 1 wt%, 2 wt%, 3 wt%.

The G'' increased while the δ of the c-STG decreased with the increasing of CNTs contents which indicated that the incorporation of the CNTs the strengthened the mechanic property of STG and prevented the cold-flow phenomenon to a certain degree.

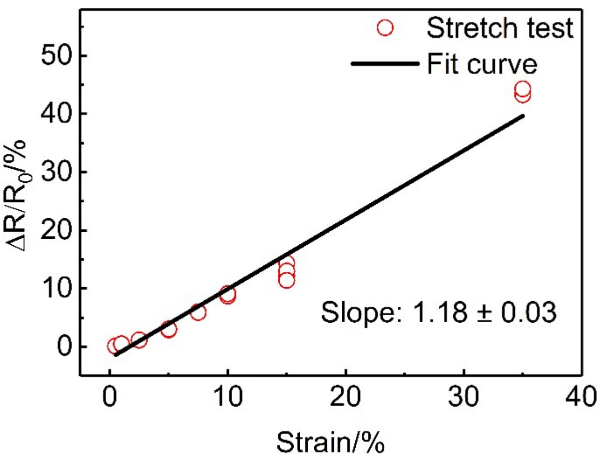

Fig. S2. The relative resistance change $\Delta R/R_0$ vs stretch strain of the c-STG@PDMS cable with 1wt% CNTs.

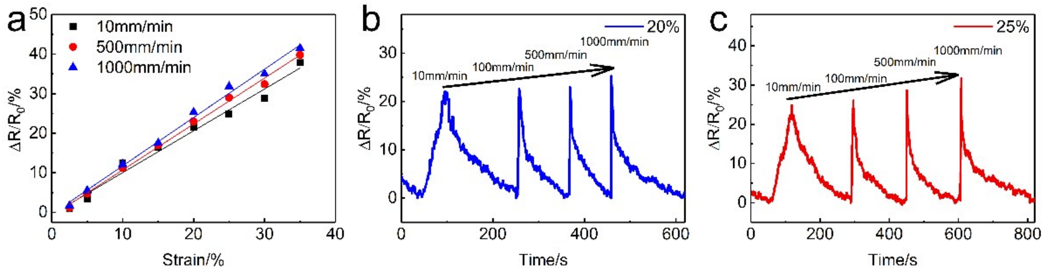

Fig. S3. (a) The relative resistance change $\Delta R/R_0$ vs strain of the c-STG@PDMS cable (2 wt%) under different stretch rates. (b), (c) the variation of $\Delta R/R_0$ under 10, 100, 500, 1000 mm/min with 20% and 25% stretch strains.

The slope under 10, 100, 500, 1000 mm/min was 1.057±0.057, 1.169±0.010, 1.161±0.028 (Fig 3c), 1.222±0.037, respectively. It could be seen that the relative resistance change was increased slightly with the increase of strain rates and similar with the strain rate in the same order of magnitude, such as the rates in 100, 500 mm/min (Fig S3a, b). The electric rate-dependent characteristic of the c-STG@PDMS cable was not obvious here possibly because the strain rates were too small. The rate-dependent behavior of the inner c-STG was not obvious in this strain range, which might cause the same results in the sensing performance of the c-STG@PDMS cable.