## **Electronic Supplementary Information (ESI) for**

## Lightweight Conductive Porous Graphene/Thermoplastic Polyurethane Foams with Ultrahigh Compressibility for Piezoresistive Sensing

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## 1. Calculation of graphene volume fraction

The graphene volume fraction is calculated based on the following equation:

$$V_G = \rho_{th} \times W_G / \rho_G$$

where where  $V_G$  and  $W_G$  are the volume and weight fraction of graphene, respectively,  $\rho_G$  is the true density of graphene, which is assumed to be 2.2 g/cm<sup>3</sup>, and  $\rho_{th}$  is the density of the porous graphene/TPU nanocomposites obtained from the following equation:

$$\rho_{th} = m/V$$

where m and V are measured weight and volume of the fabricated foam in natural state respectively.



Fig. S1 Compression stress-strain curves of porous graphene/TPU foam with graphene loading of 0.1 vol%.



Fig. S2 Responsivity of porous graphene/TPU foam with 0.1 vol% at the end of each strain under stepwise application of cyclic compression under the compression rate of 5 mm·min<sup>-1</sup>.