

## Supplementary Information

### Preparation of the 3.6 wt% GO, 10.7 wt% GO and 17.9 wt% MWCNTs nanofiber mats

The electrospun PVA/GO solutions of the 3.6 wt% GO- and 10.7 wt% GO- filled nanofiber mats were prepared by dissolution of 1.4 g PVA into 20 mL GO solution (2.5 mg/mL and 7.5 mg/mL), respectively, under constant stirring at room temperature for 2 d (days). The electrospun PVA/GO/MWCNTs mixed solution of 17.9 wt% MWCNTs nanofiber mat was prepared by disperse 0.25 g MWCNTs in 20 mL PVA aqueous solution (5 g/L) by ultrasonic treatment for 30 min. Afterward, 0.1 g GO was added to the mixed solution after ultrasonic treatment for 15 min. Finally, 1.3 g PVA was dissolved in the mixed solution so that a composite solution of suitable viscosity could be obtained for electrospinning. All electrospun solutions were electrospinning at the same the condition as show in "Preparation of the nanofiber mats".

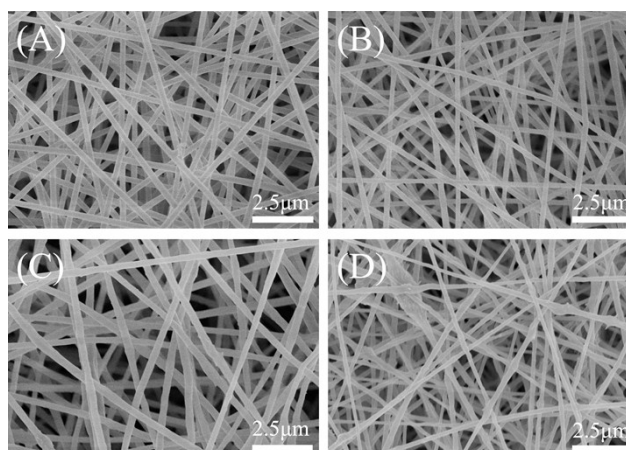


Fig. S1 FESEM images of the nanofiber mats with different carbon amounts prepared by the electrospinning technology with 13 kV voltages and 15 cm distance. 3.6 wt% GO (A), 7 wt% GO (B), 14 wt% MWCNTs (C) and 17.9 wt% MWCNTs (D)

Table S1 Tensile strength of the PVA, PVA/GO, PVA/GO/MWCNTs nanofiber mats before and after crosslinked.

Tensile strength	Before crosslinked	After crosslinked	Improvement %
PVA	16.7±0.7 MPa	21.7±0.9 MPa	30
PVA/GO	13.2±0.8 MPa	22.7±1.3 MPa	72
PVA/GO/MWCNTs	18.1±0.5 MPa	33.4±1.2 MPa	85