Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Wearable electronics for heating and sensing based on a multifunctional PET/Silver nanowire/PDMS yarn

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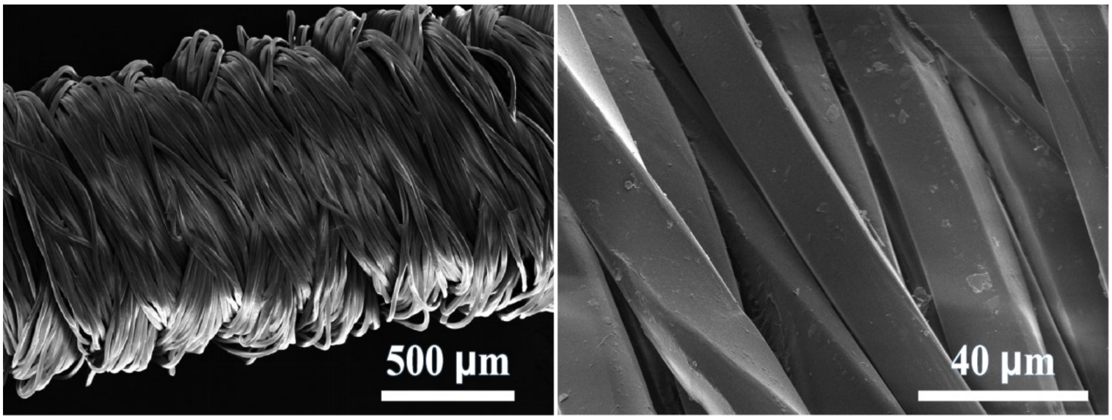

Fig. S1. SEM images of initial PET yarn.

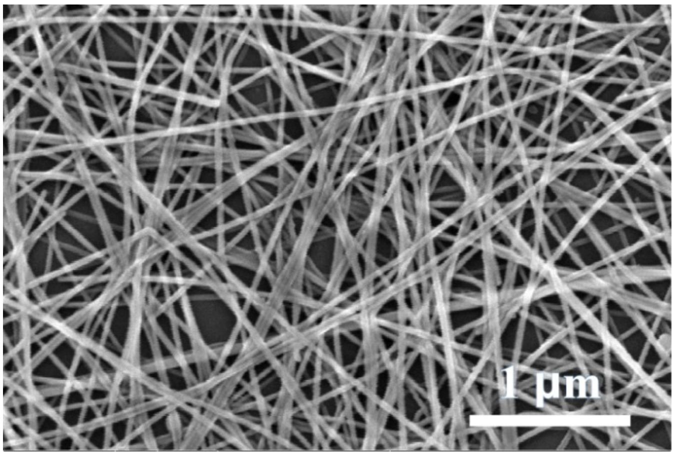

Fig. S2. SEM image of purified AgNWs.

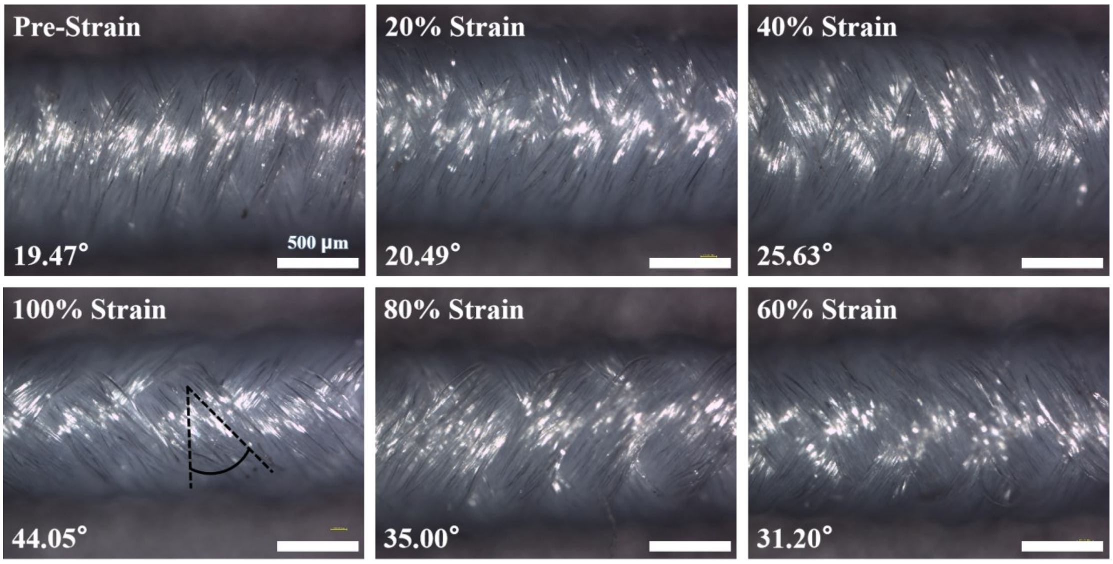

Fig. S3. OM images of PET yarn under 0%, 20%, 40%, 60%, 80% and 100% tensile strain.

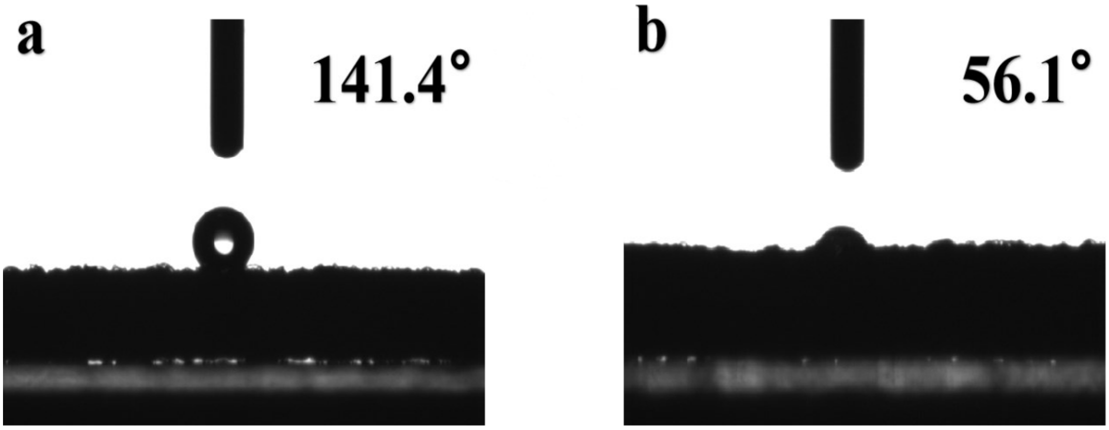

Fig. S4. (a,b) Optical images showing the contact angles of water on untreated PET yarn and UV/Ozone treated PET yarn.

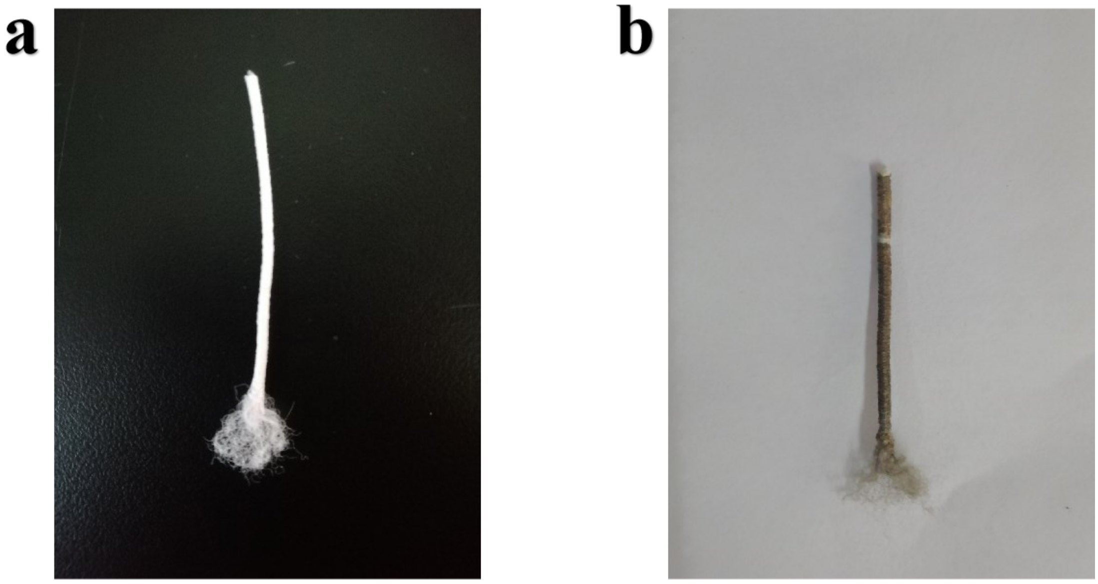

Fig. S5. (a,b) Optical photos of a pristine PET yarn(left) and AgNWs coated PET yarn(right).

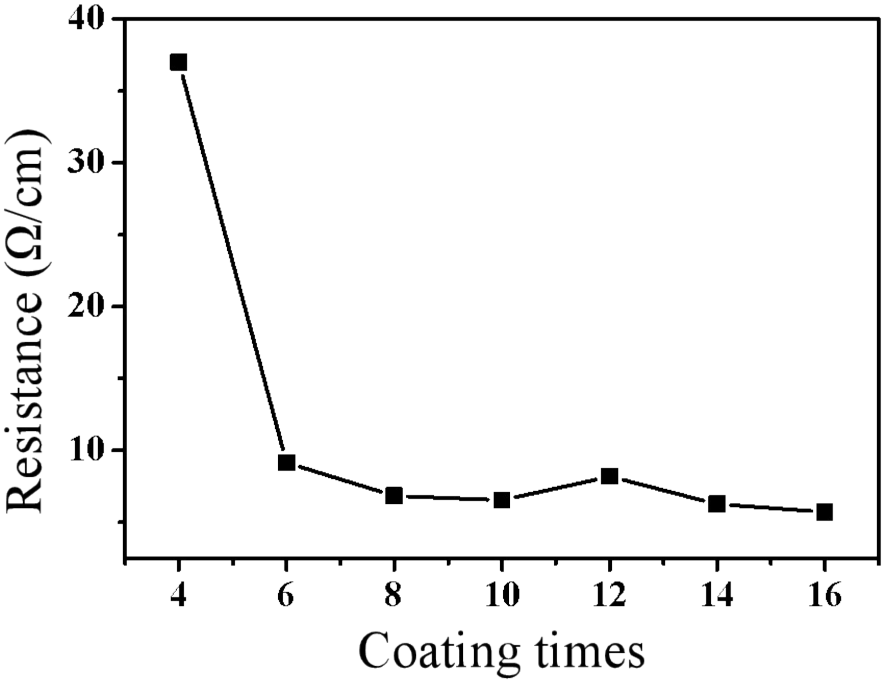

Fig. S6. Resistance of PET/AgNW yarn changed with coating times. When coating times was ten, the resistance remained flat.

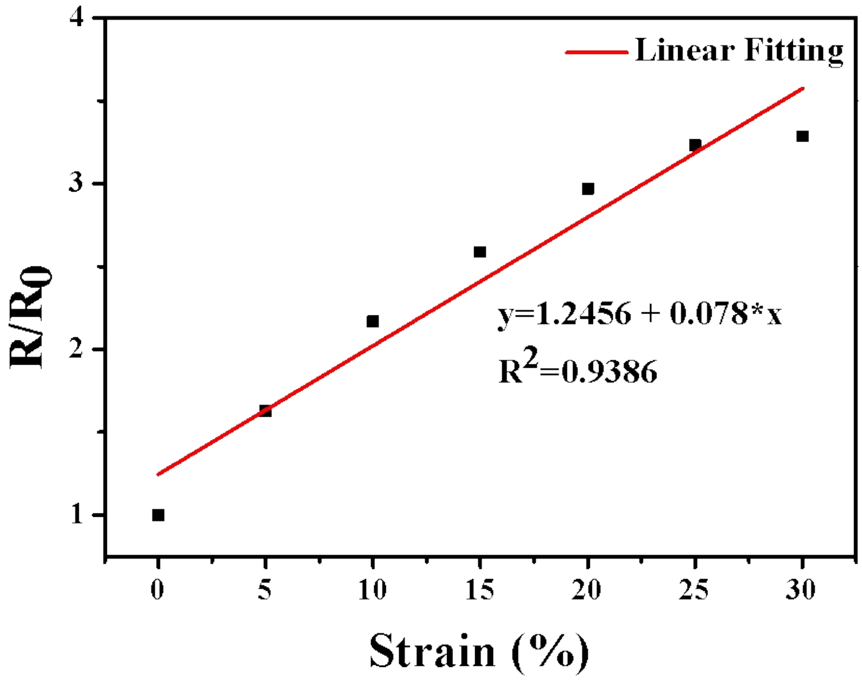

Fig. S7. The linear relationship between strain and relative resistance variation of PDMS-coated Yarn 100% within 30% strain.

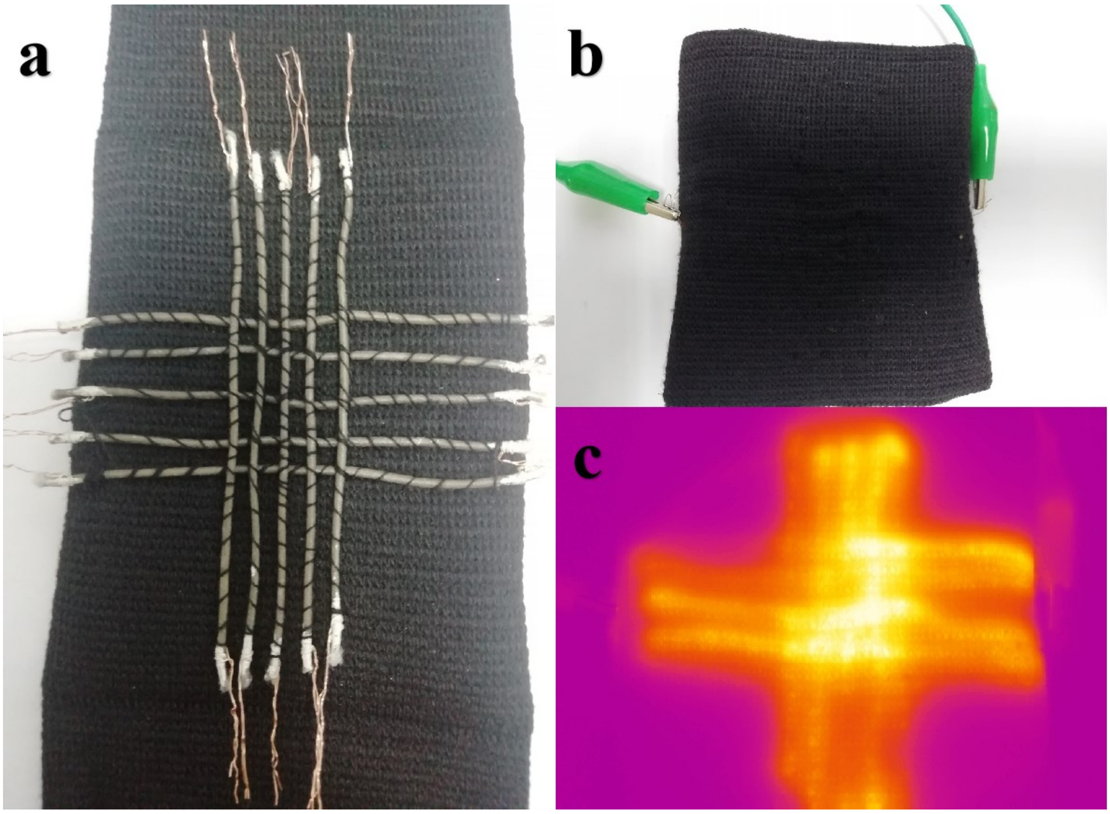

Fig. S8. (a)woven PET/AgNW/PDMS yarn into a heating fabric and then integrated it with a wearable bracer. (b,c)the temperature distribution of the wearable bracer under 4 V voltage.

Table S1. Comparison of main performance of our sensor and previously reported sensors.

Material	Gauge factor	Strain range (%)	Multifunction	Ref.
Ag/cellulose nanofiber	1	20		1
c-MWCNTs/BSA/cellulose	1.57	70		2
SWNTs/MWNTs/polyurethane yarns	1.24	120		3
Graphene/carboxymethyl cellulose	1.58	70		4
Elastic hydrogels	0.478	200	Multifunction	5
Graphene/TPU	0.78	30		6
AgNWs/Ecoflex	0.7	50	Multifunction	7
AgNWs/CPY	4.2	200	Multifunction	8
Kevlar/PVA/AgNPs	8.14	65		9
Carbon sponge/PDMS	1.78	20	Multifunction	10
Polyurethane/Cotton/carbon Nanotubes	0.65	300		11
Elastomer/AgNWs	3.2	30		12
PE/rGO	3.7	200		13
PEDOT/textile	0.43	25		14
AgNWs/PET/PDMS	11.4	40	Multifunction	This work

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