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Supporting Information

Silver Nanowires Coated on Cotton for Flexible Pressure Sensors

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Fig.S1 Working stability of the flexible pressure sensors constructed by 1, 3, 4 and 5 layers of conductive cotton sheets for more than 5000 cycles with a pressure of 100 Pa; b, d, f and h are the enlarged view of selected area from a, c, e and g, respectively.

Tab.S1 The summary of conductivity and sensitivity for typical flexible piezoresistive pressure sensors reported in recent years.

Preparing method	Conductive path	Conductivity	Sensitivity	References
Elastomers with interlocked microdome arrays	CNTs	1.4×10 ⁴ -3.9×10 ⁹ Ω	15.1 kPa ⁻¹	[1,2]
Bioinspired interlocked and hierarchical ZnO NWs arrays	ZnO NWs arrays coated with a thin Pt/Ni film	$\sim 10^6 \Omega$	6.8 kPa ⁻¹	[3]
Mimosa inspired design of flexible pressure sensors	Micro-structured PDMS film with gold deposition	110±14Ω/□	50.17 kPa ⁻¹	[4]
Electronic skin with petal molded microstructure	Cu-Ag core-shell NWs	Not provided	1.35 kPa ⁻¹	[5]
Flexible pressure sensors with gaussian random distribution contact surface	СВ	>450 Ω·cm	13.8 kPa ⁻¹	[6, 7]
Pressure sensors with micro- pyramid array	PUD/PEDOT:PSS composites	$> 2 \times 10^{-2} \Omega \cdot cm$	4.88 kPa ⁻¹	[8]
Flexible pressure sensors consisting of PANI NFs and Au-coated PDMS micropillars	PANI and Au- coated PDMS micropillars	PANI film: 0.03 Ω/\Box PDMS micropillars: 420±14 Ω/\Box	2.0 kPa ⁻¹	[9]
Flexible pressure sensors consisting of PPy film and Au-coated PDMS micropillars	PPy film and Au- coated PDMS micropillars	PPy film: 1 Ω·cm PDMS micropillars: thickness is 100 nm but the conductivity is not provided	1.8 kPa ⁻¹	[10]
Strain gauge sensors with interlocking of nanofibres	Pt-coated PUA nanohair arrays	102 Ω/□	~0.01 kPa ⁻¹	[11]
Silk-molded flexible e-skin	Thermal annealed SWNTs networks	$\sim 3.5 \times 10^4 \Omega/\Box$	1.8 kPa ⁻¹	[12]
PDMS/carbonized cotton fiber composites	Carbonized cotton fiber	~270 Ω·cm	6.04 kPa ⁻¹	[13]
Wearable pressure sensor based on conductive hydrogel spheres	SWCNT/alginate conductive hydrogel spheres	>25000 Ω/□	0.176 kPa ⁻¹	[14]
Pressure sensor based on hollow-sphere microstructure	РРу	10 ⁶ -10 ⁷ Ω	133.1 kPa ⁻¹	[15]
PPy/AgNWs Aero Sponges	PPy and AgNWs	>10000 Ω	0.33 kPa ⁻¹	[16]
AuNWs coated on tissue paper	AuNWs	91100±52000kΩ/□	1.14 kPa ⁻¹	[17]

Preparing method	Conductive path	Conductivity	Sensitivity	References
Graphene based pressure	Graphene	74300 Ω	8.5 mV/Bar	[18]
sensor			GF: 1.6	
Au nanoribbon coated PU	Au nanoribbon	~420 Ω·cm	0.31 kPa ⁻¹	[19]
sponge				
CNTs/Ag sponges	CNTs	~625 Ω·cm	GF < 1.6	[20]
Graphene/PU sponge with	Graphene	Not provided	0.26 kPa ⁻¹	[21]
fractured microstructure				
Graphene/PI nanocomposite	Graphene	~450 Ω·cm	0.18 kPa ⁻¹	[22]
foam				
Graphene force sensor	Graphene	971.6 Ω/□	0.024 kPa ⁻¹	[23]
Honeycomb like graphene	Graphene	Not provided	1.61 kPa ⁻¹	[24]
film				
Pressure sensor with double	Graphene	17000 Ω	0.24 kPa ⁻¹	[25]
layer graphene				
AgNWs coated on cotton	AgNWs	10 ⁻⁵ -10 ⁻⁴ Ω·cm	3.4 kPa ⁻¹	This work
fibers				

Abbreviations: CNTs, carbon nanotubes; NWs: nanowires; ZnO, zinc oxide; PDMS, polydimethylsiloxane; CB, carbon black; PUD, polyurethane dispersion; PEDOT, poly(3,4-ethylenedioxythiophene); PSS, poly(styrenesulfonate); PANI, polyaniline; NFs, nanofibers; PPy, polypyrrole; PUA, ultraviolet-curable polyurethane acrylate; SWNTs, Single-walled carbon nanotubes; PU, polyurethane; PI, polyimide; GF, gauge factor.

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