

Supporting Information

Stretchable and Conductive Cellulose/Conductive Polymer Composite Films for On-Skin Strain Sensors

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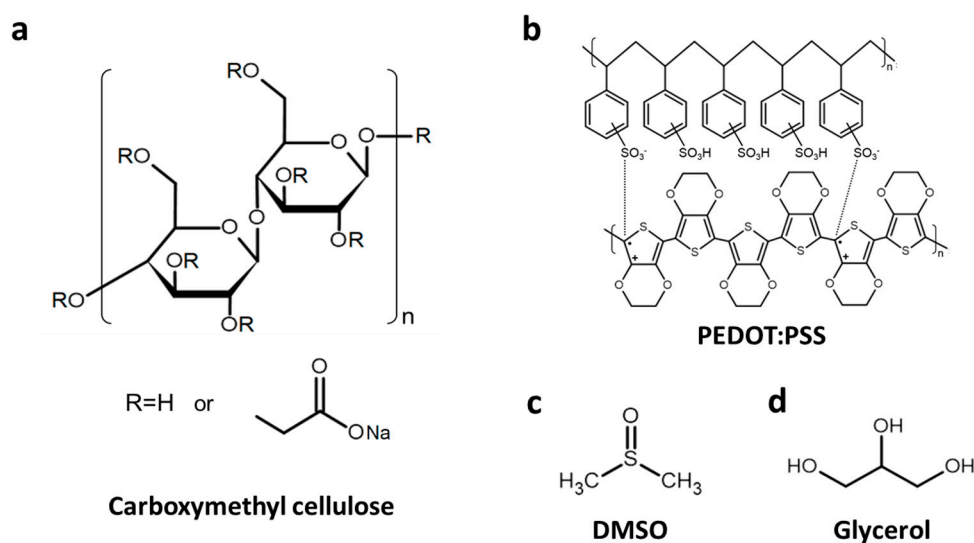


Figure S1. Chemical structures of (a) carboxymethyl cellulose (CMC), (b) PEDOT:PSS, (c) DMSO, and (d) glycerol.

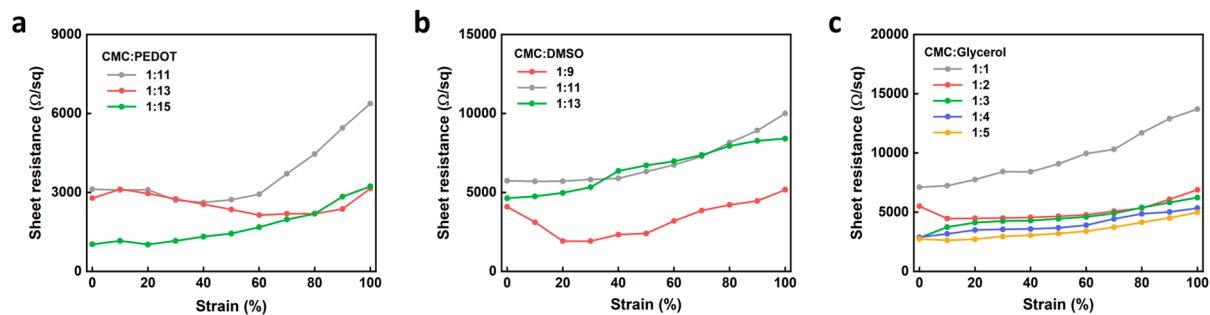


Figure S2. Sheet resistances of CMC-PEDOT:PSS films as a function of ratios of CMC to (a) PEDOT:PSS, (b) DMSO, and (c) glycerol.

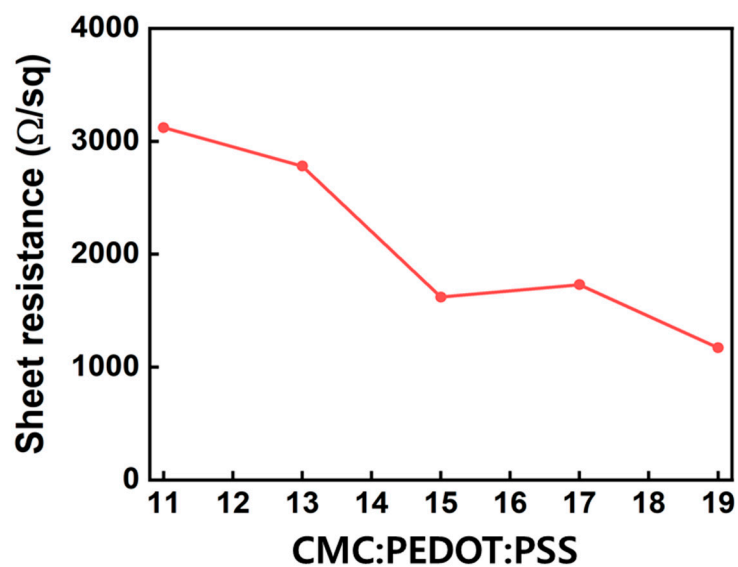


Figure S3. Sheet resistance of the CMC-PEDOT:PSS film (CMC:DMSO=1:11 and CMC:glycerol=1:5) as a function of the ratio of CMC to PEDOT:PSS.

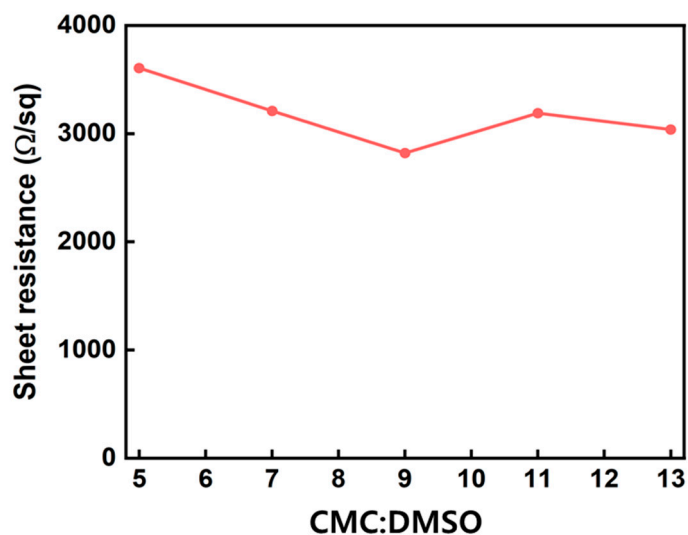


Figure S4. Sheet resistance of CMC-PEDOT:PSS film (CMC:PEDOT:PSS=1:13 and CMC:glycerol=1:2) as a function of the ratio of CMC to DMSO.

Table S1. Cellulose-PEDOT-based composites and their electrical conductivities.

Samples	Flexible or Stretchable	Electrical conductivity (S/cm)	Ref.
Bacterial cellulose (BC) fiber/AuNPs/PEDOT:PSS	Flexible	16.65 ± 1.274	[1]
Cellulose nanofibers(CNFs)/PEDOT:PSS/PPy (CNF/PEDOT:PSS)	Flexible	10.55 (2.58)	[2]
α -Cellulose/PEDOT:PSS/MWCNT (α -Cellulose/PEDOT:PSS)	Flexible	300 (30)	[3]
cellulose nanofiber (CNFs)/PEDOT:PSS	Flexible	22.6	[4]
PEDOT:PSS/CNF nanopaper	Flexible	66.67	[5]
Polythiophene-Derivative Cellulose	Flexible	0.5-0.8	[6]
PEDOT/sulfated cellulose (CS)	Flexible	5.76×10^{-3}	[7]
PVA/Gly-CNC/PVP/PEDOT	Stretchable	$1.73 \times 10^{-2} \pm 0.099$	[8]
Carboxymethyl cellulose/Lab-synthesized PEDOT:PSS	Stretchable	9.7×10^{-3}	This work

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