

## Supporting information

# Multifunctional wrinkled nacreous all-carbon films for high-performance stretchable strain sensors and supercapacitors

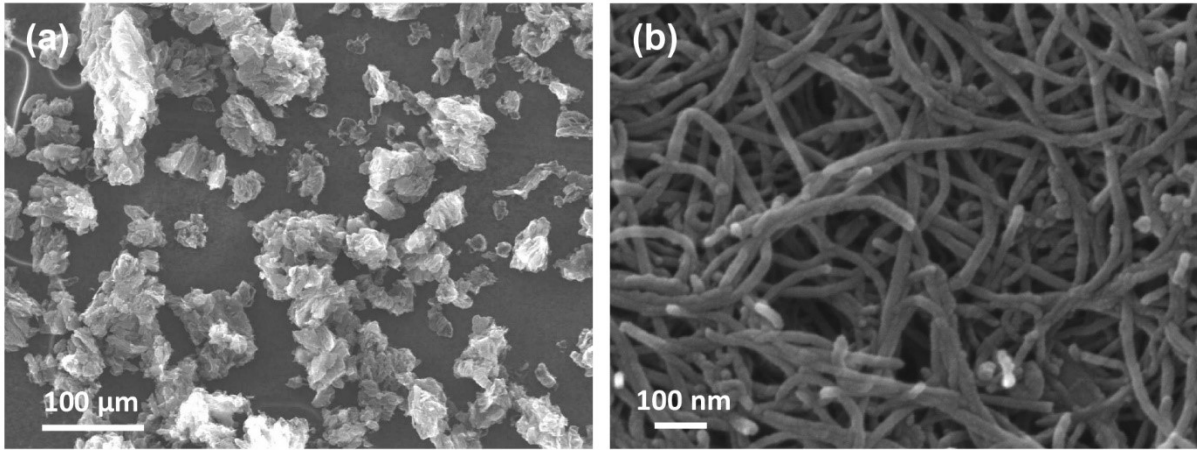
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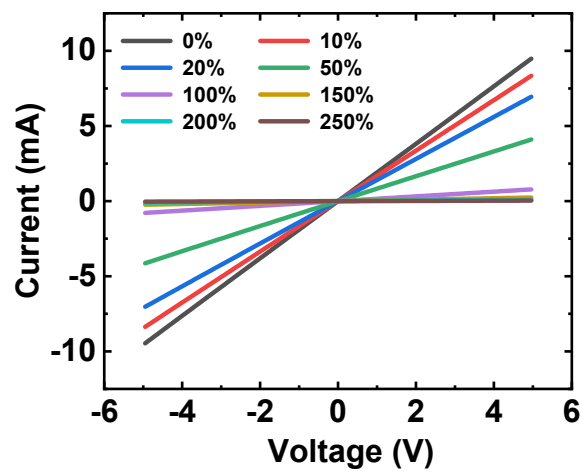
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**Figure S1.** SEM images of (a) rGO powders and (b) MWCNTs.



**Figure S2.** Current-voltage curves of the rGO/CNT film at various strains (50 wt.% rGO and 50 wt.% MWCNT).

**Table S1.** Comparison of the electrochemical performances of stretchable/flexible supercapacitors using graphene or CNTs as electrode materials.

Electrode material	Electrolyte	$C_A$ (mF/cm <sup>2</sup> )	Voltage range (V)	Substrate	Ref.*
<b>rGO/CNT</b>	<b>PVA/H<sub>3</sub>PO<sub>4</sub></b>	<b>34</b>	<b>1</b>	<b>VHB film</b>	<b>This work</b>
Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> /RGO	PVA/H <sub>2</sub> SO <sub>4</sub>	17	0.4	VHB film	[49]
MXene/Carbon black/alginate	PVA/Li <sub>2</sub> SO <sub>4</sub>	10	1	VHB film	[49, 50]
CNT forest	PVA/KCl	5	0.8	VHB film	[51]
NCNT array	PVA/H <sub>3</sub> PO <sub>4</sub>	31	1	PU film	[52]
PANI/Graphene woven fabric	PVA/H <sub>3</sub> PO <sub>4</sub>	8	1	PDMS	[53]
Interwoven CNT	PVA/KOH	0.3	0.8	PDMS	[54]
RGO/PANI	PVA/H <sub>2</sub> SO <sub>4</sub>	36	0.8	Parylene film	[55]
N-doped bernal graphene	PVA/NaClO <sub>4</sub>	26.75	0.8	Ag/PET	[56]
MoO <sub>3</sub> /CNT	PVA/KOH	28	1	PDMS	[57]
MWCNT/fabric	PVA/KOH	4.17	1	fabric	[58]

\*References shown in the main text