

Vertically-aligned Ti_2CT_x on carbon cloth for high-performance flexible pressure sensors

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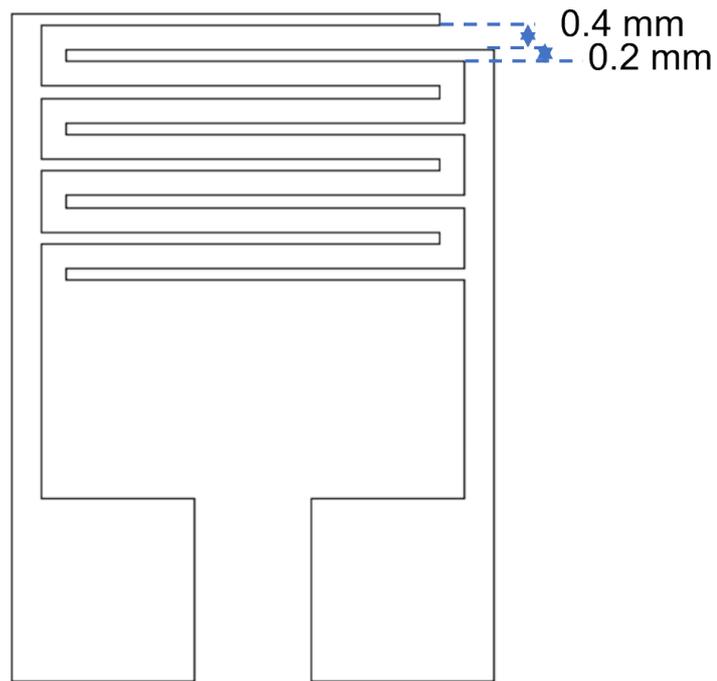


Fig. S1. The geometric dimension of gold interdigital electrode.

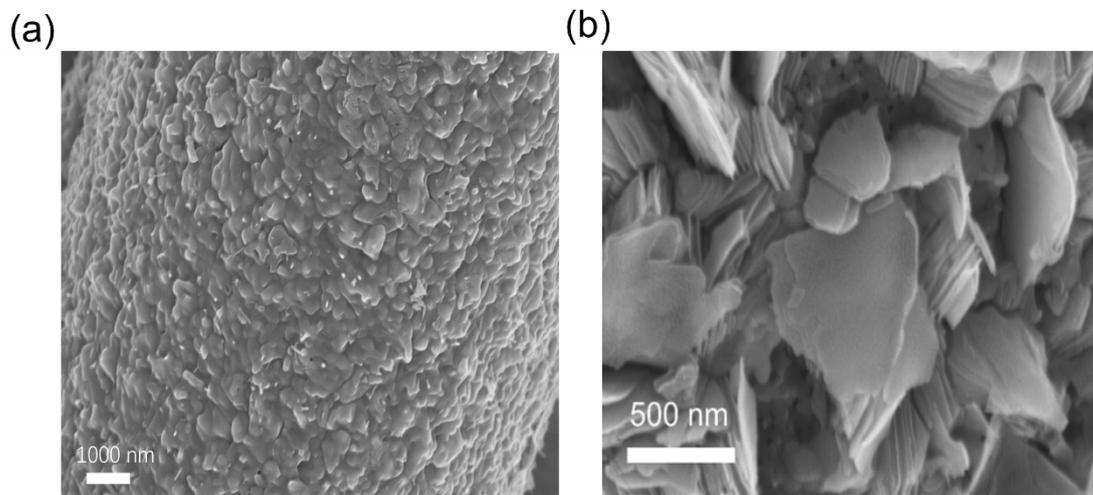


Fig. S2. SEM images of (a) Ti_2AlC MAX phase (b) Ti_2CT_x MXene nanosheets.

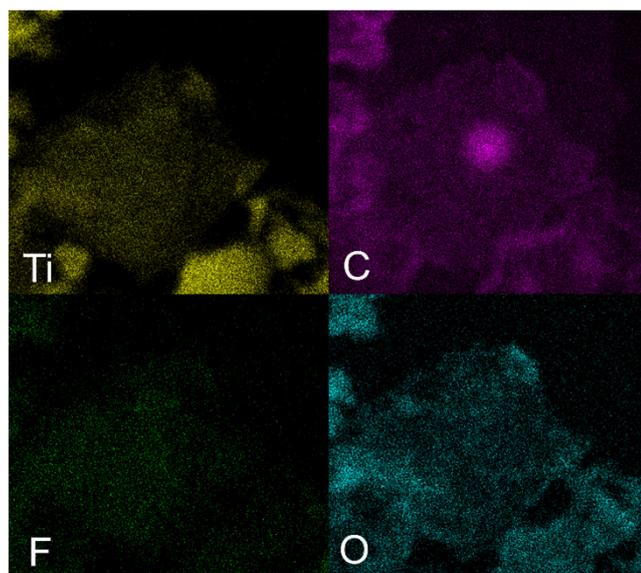


Fig. S3. EDS elemental mappings of Ti, C, F and O elements.

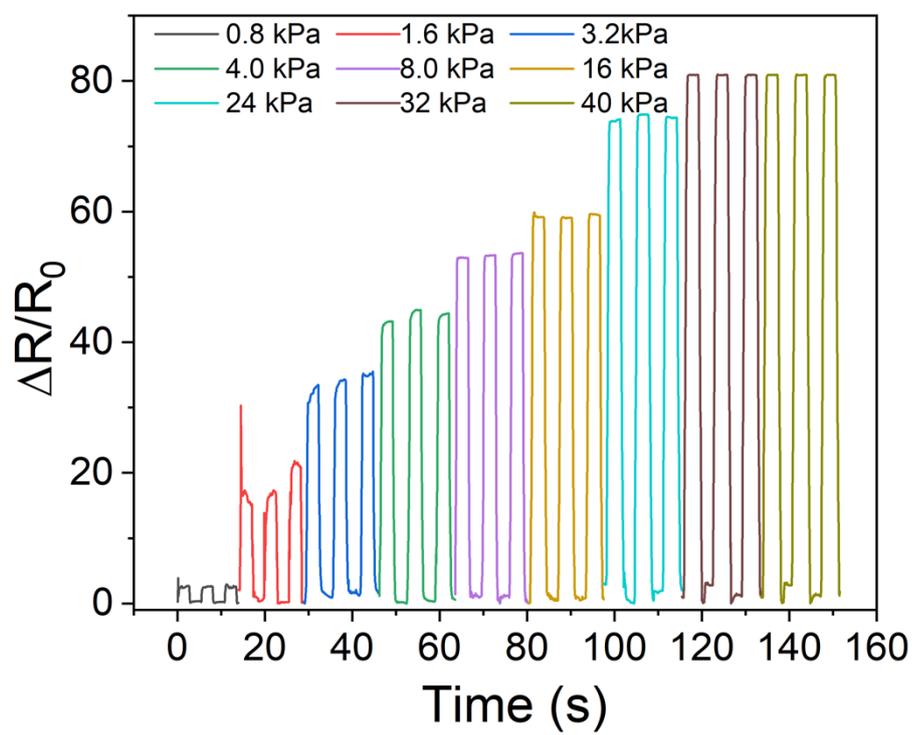


Fig. S4. Relative resistance variation of the sensor made from $\text{Ti}_2\text{AlC@CC}$.

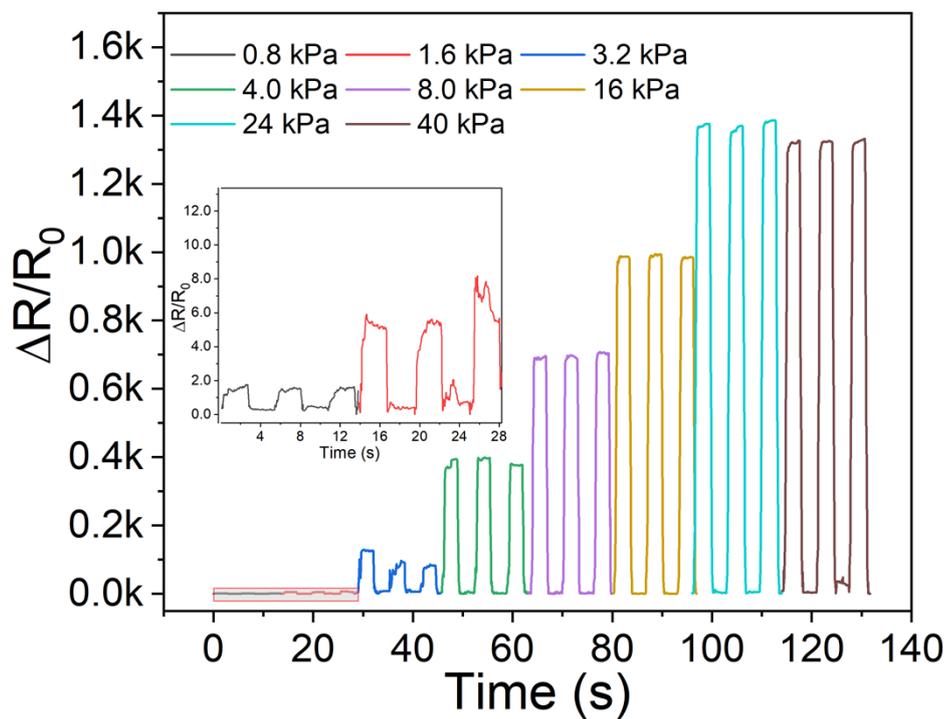


Fig. S5. Relative resistance variation of the sensor made from $Ti_2CT_x@CC$.

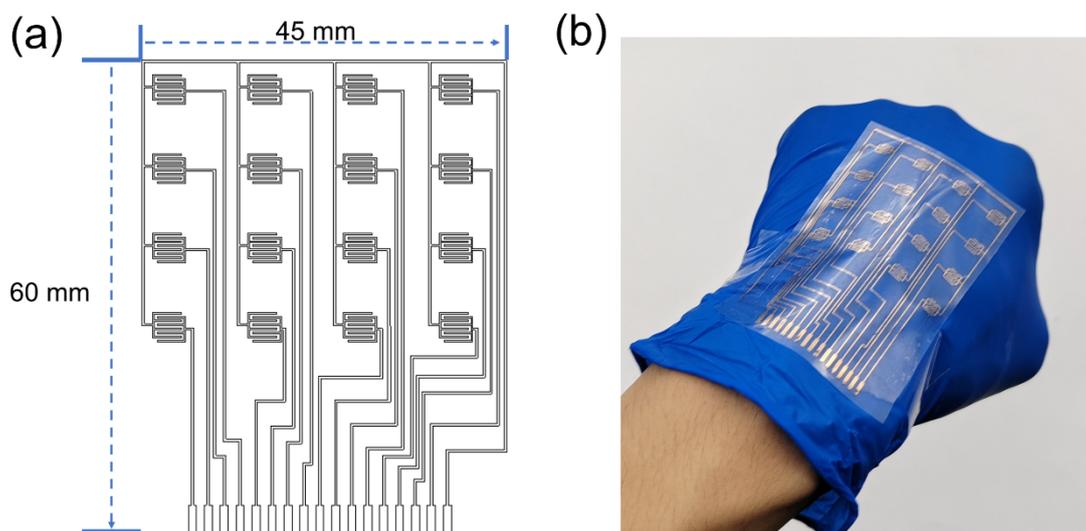


Fig. S6. (a) The geometric dimension of the 4×4 electrode array. (b) The digital picture of the electrode array adhered to the glove.

Table S1. Summary of sensing performance of MXene-based pressure sensors with different structures.

Materials	Structure type	Sensing range	Sensitivity	Response time	Stability	Refs
Ti ₃ C ₂ T _x MXene/Bacterial Cellulose	Aerogel	0-6.60 kPa	20.14 kPa ⁻¹ (2.62-6.60 kPa)	100 ms	5000 cycles	[1]
PAM/CMC/DA/MXene	Hydrogel	0-500 kPa	2.61 kPa ⁻¹	160/180 ms	6700 s	[2]
CS/MXene/PU sponge/PVA	3D Sponge Network	0-22 kPa	140.6 kPa ⁻¹ (5-22 kPa)	200/30 ms	5000 cycles	[3]
AgNWS/MXene	multi-layered porous structure	0- 100 kPa	770.9 kPa ⁻¹ (0-0.75 kPa)	70/81 ms	5000 cycles	[4]
MXene/PDMS	Hierarchical microstructure	0-436 kPa	70.6 kPa ⁻¹ (0-100 kPa)	18/19 ms	9700 cycles	[5]
MXene/PVDF@ZIF-8	Nanofiber membranes	0-125 kPa	77.9 kPa ⁻¹ (0-20 kPa)	20/30 ms	10000 cycles	[6]
Pt-infiltrated MXene	Paper substrate	0-9 kPa	0.5 kPa ⁻¹ (0-5 kPa)	20/50 ms	1000 cycles	[7]
Alk-MXene@p-TPU	Ultra-thin film	300 kPa	2.88 kPa ⁻¹ (0-13 kPa)	100/110 ms	5000 cycles	[8]
MXene/Cotton	Fabric-based film	0-160 kPa	5.30kPa ⁻¹ (0-1.30 kPa)	50/20 ms	1000 cycles	[9]
MXene@CC/PVDF	Fabric-based film	0-56 kPa	3109.2 kPa ⁻¹ (3.2 kPa-8 kPa)	80/80 ms	8000 cycles	This work

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