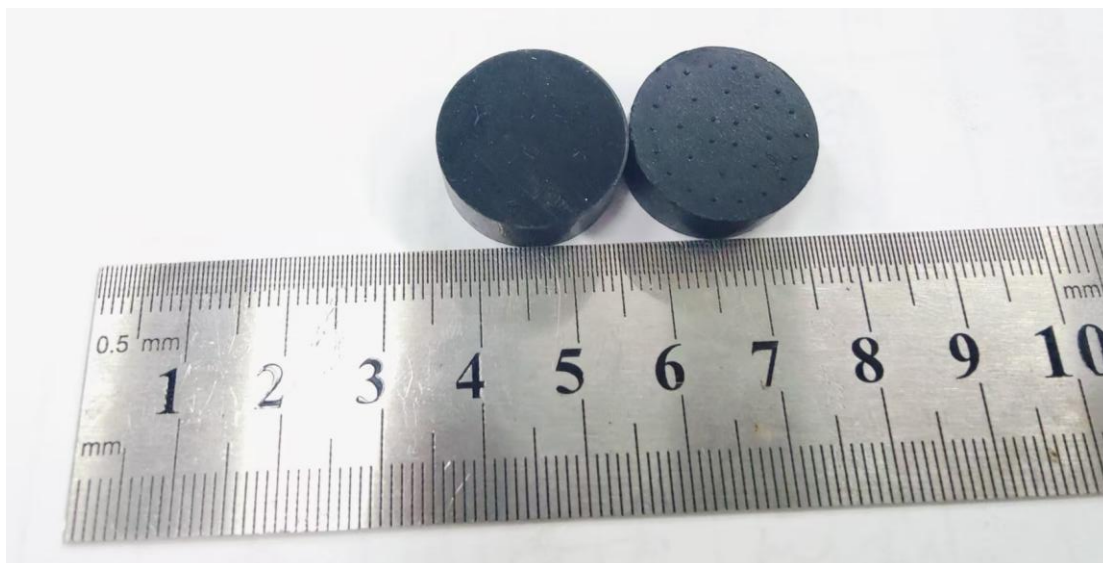




This drawing is not quoted in the text, but only to show the real size and specific structure.

(flat bottom and microstructure).

Testing Instrument: JEOL JEM-2100Plus

Dispersion processing: Ethanol

Sample deposition: Carbon film supported on copper mesh

Accelerating Voltage: 200kv

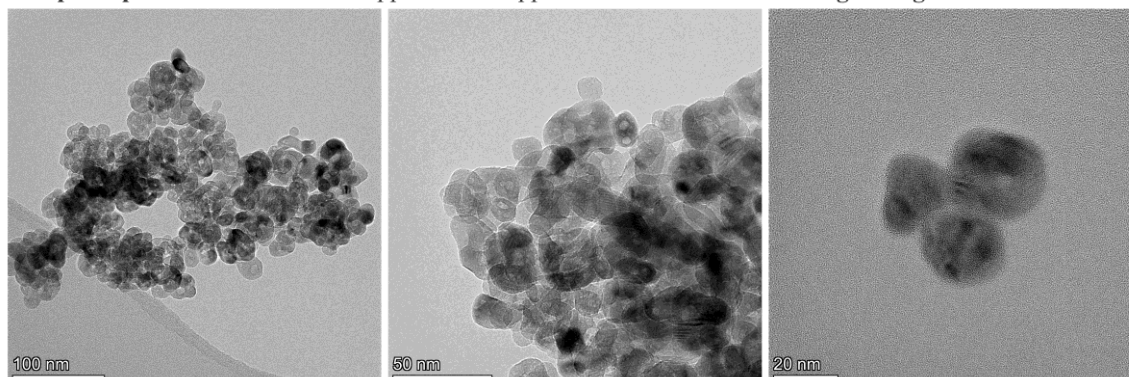


Figure S1. TEM: TiO₂ scale characterisation.

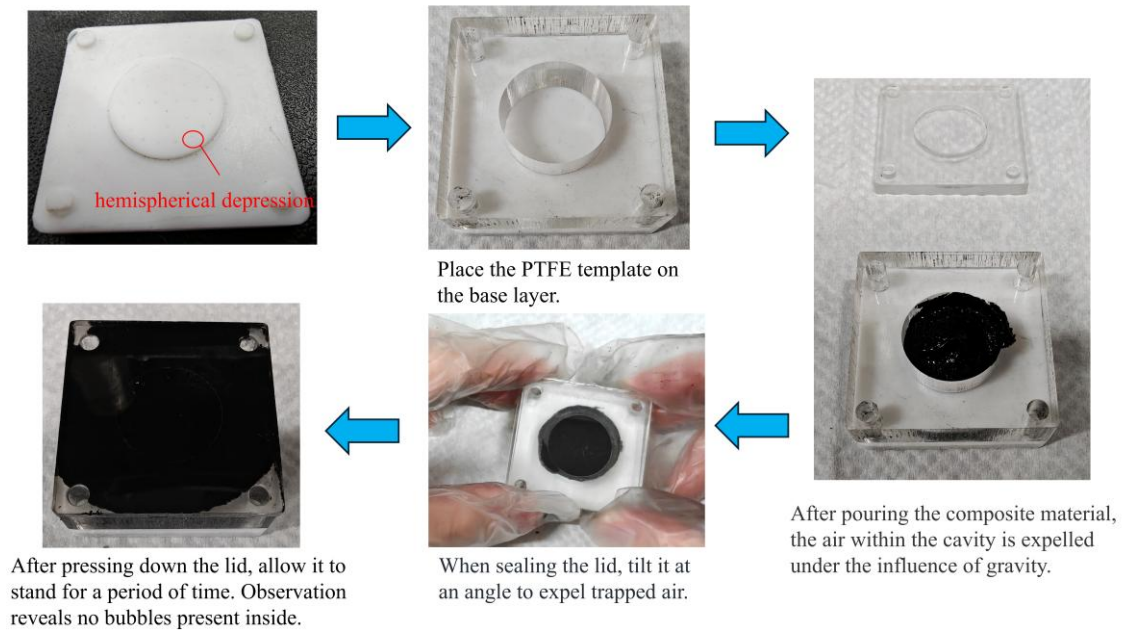


Figure S2. Schematic diagram of the microstructure design for the top template.

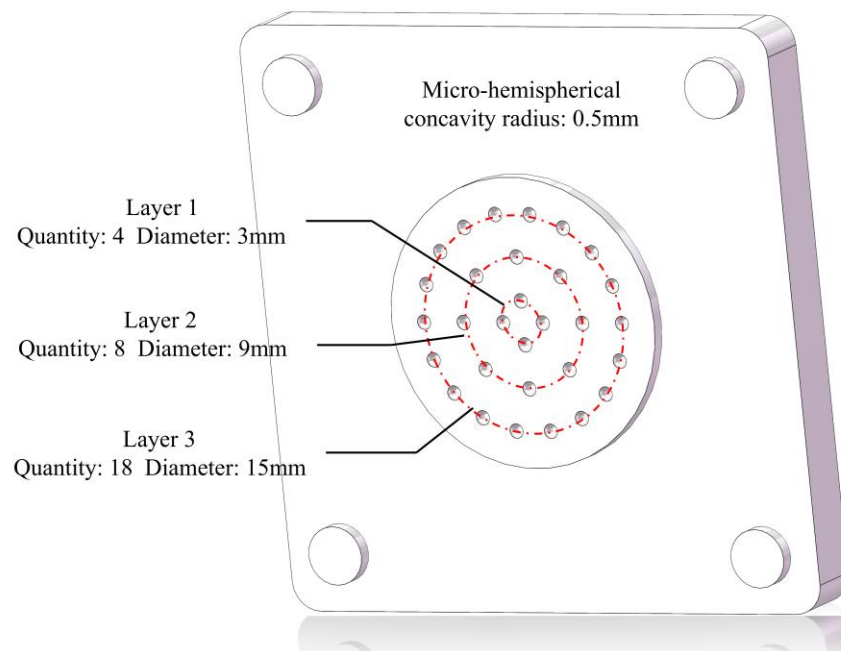


Figure S3. Composite material filling process for moulds.

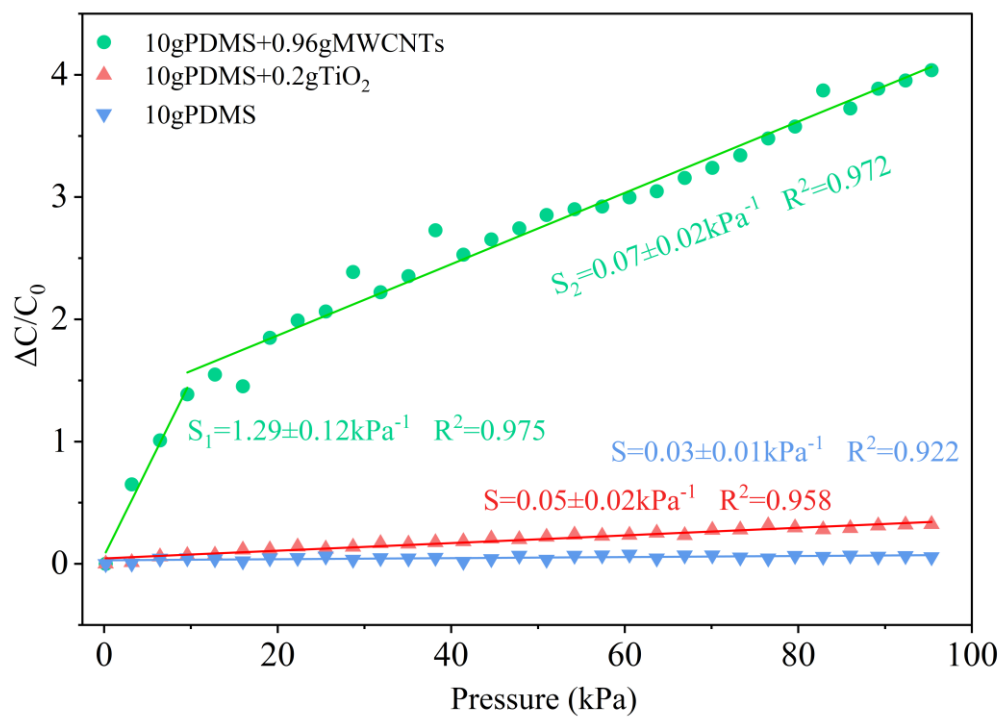


Figure S4. Single-factor comparison: PDMS/TiO₂ and PDMS/MWCNTs.

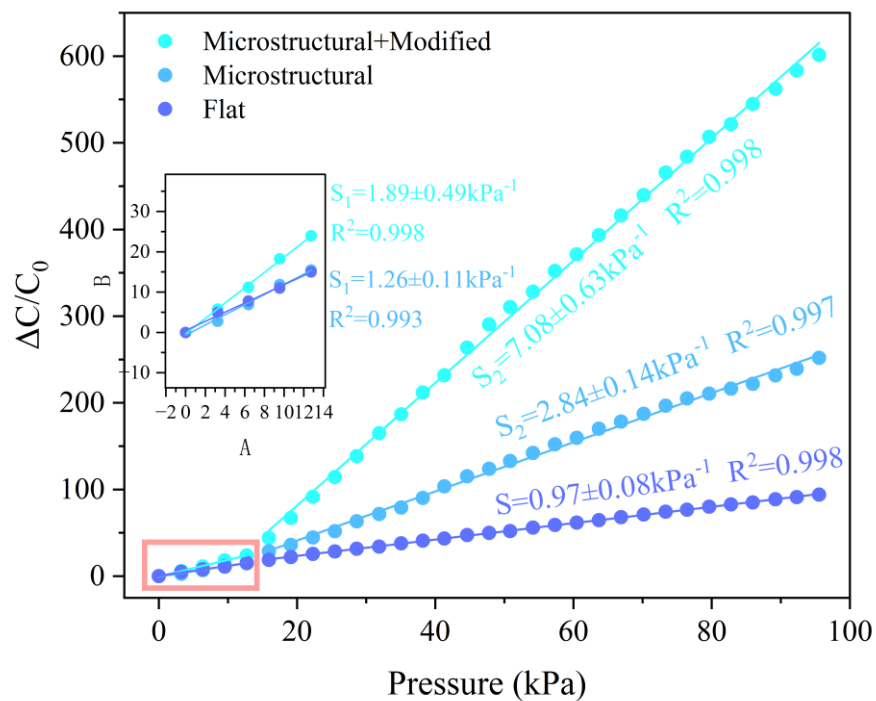


Figure S5. Sensitivity comparison under different preparation processes.

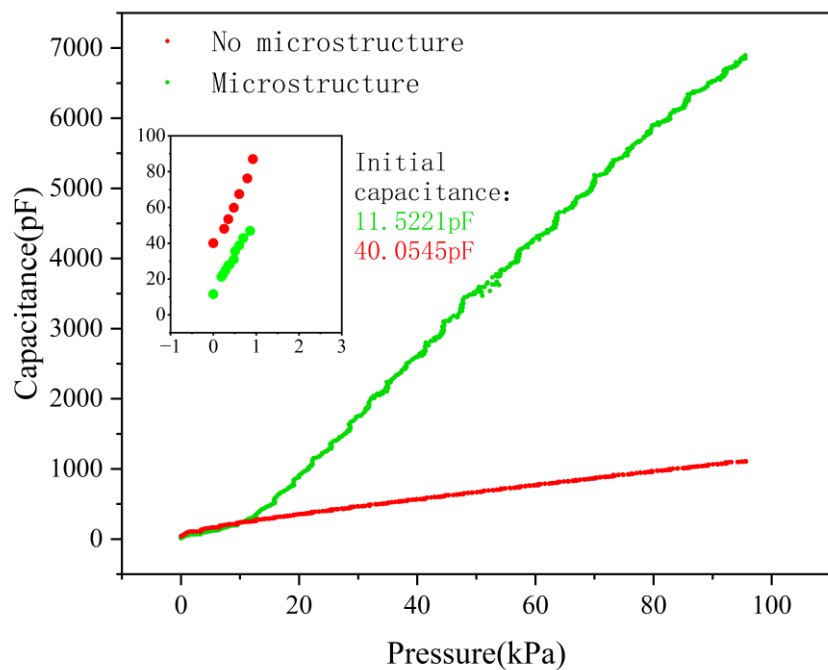


Figure S6. describes the microstructure changes in the initial capacitance value of composite materials.

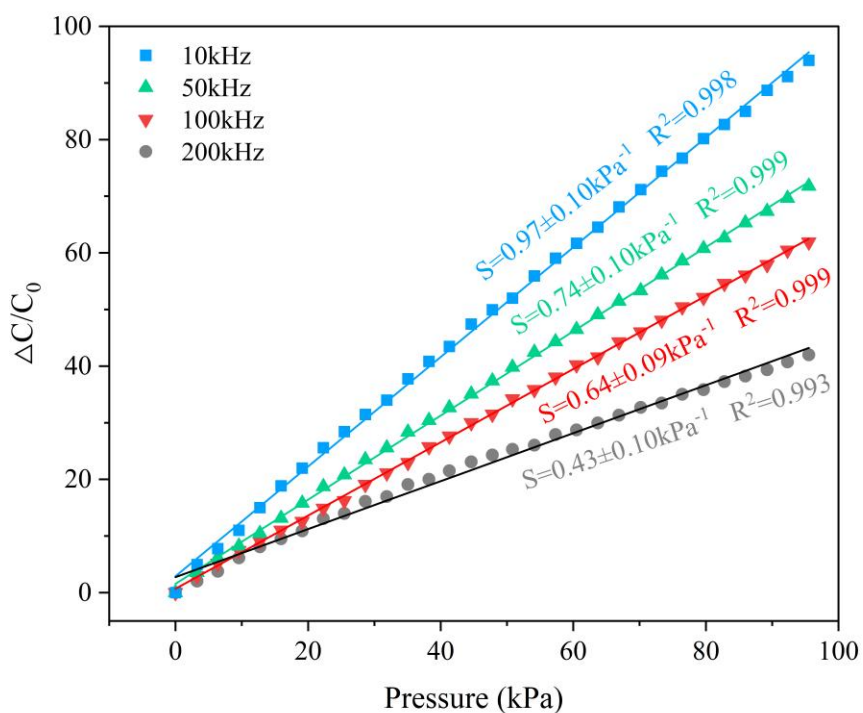


Figure S7. Sensitivity of flat bottomed composite materials at different frequencies

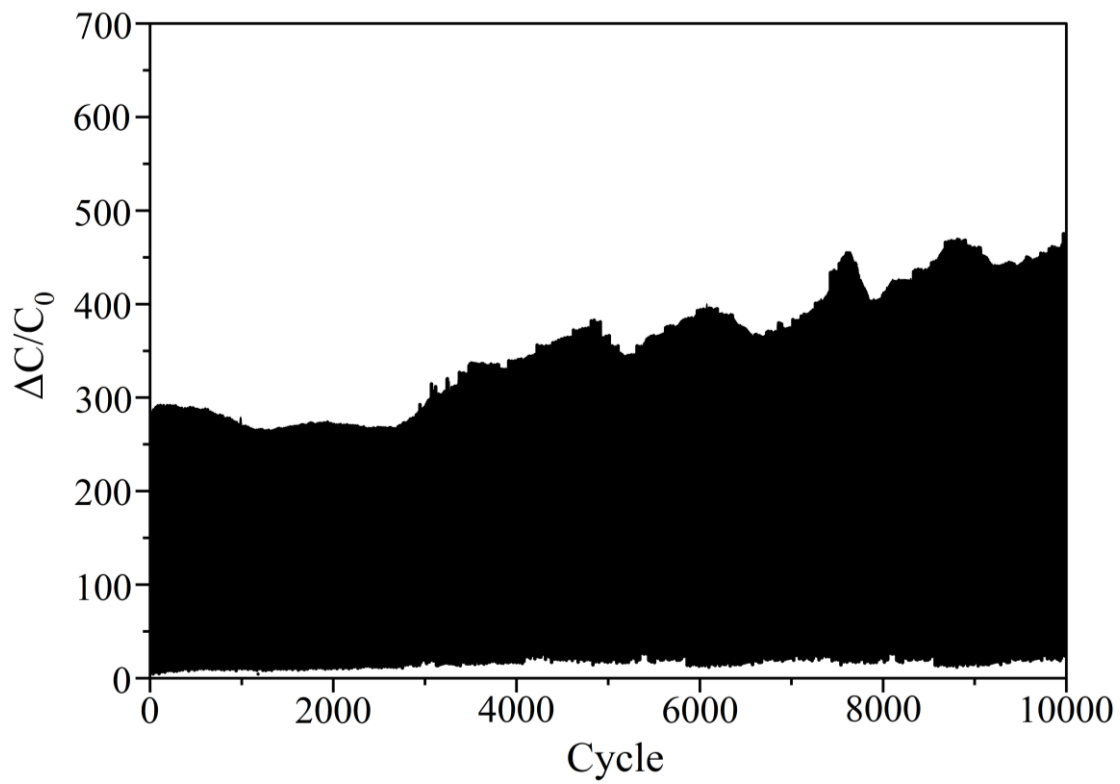


Figure S8. 10000 cycles of loading for Sensor 2