Supplementary Information

Static electricity-based motion artifact-free electrocardiography with novel $Ti_3C_2T_x$ MXene/Ag nanowire/polymer hybrid dry electrodes

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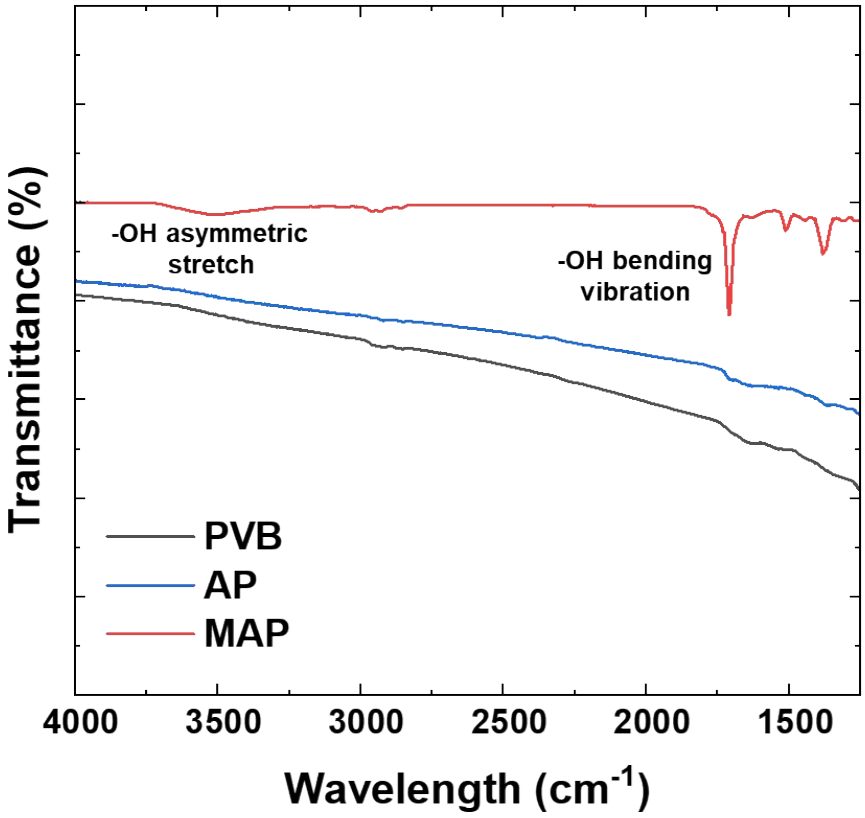

Figure S1. FT-IR spectra of PVB, AP, and MAP.

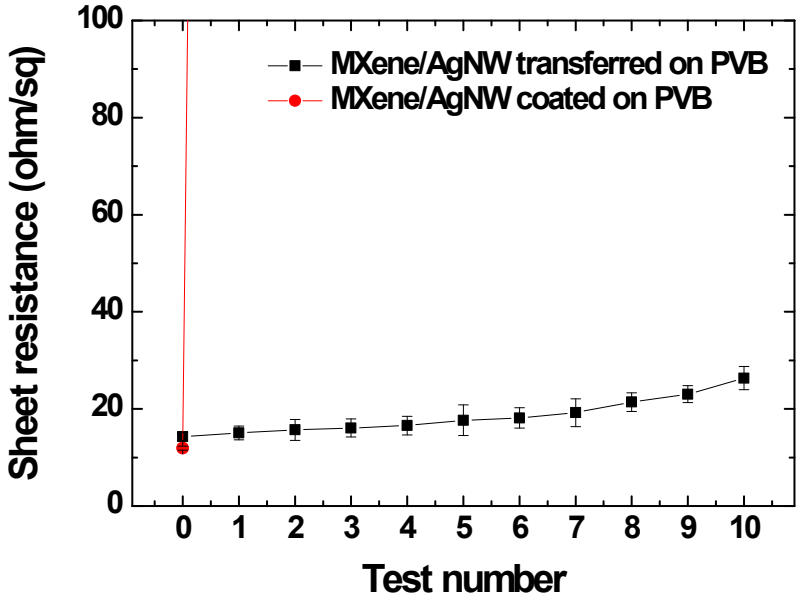

Figure S2. Sheet resistance of the MXene/AgNW transferred and coated onto PVB measured during repeated tape testing.

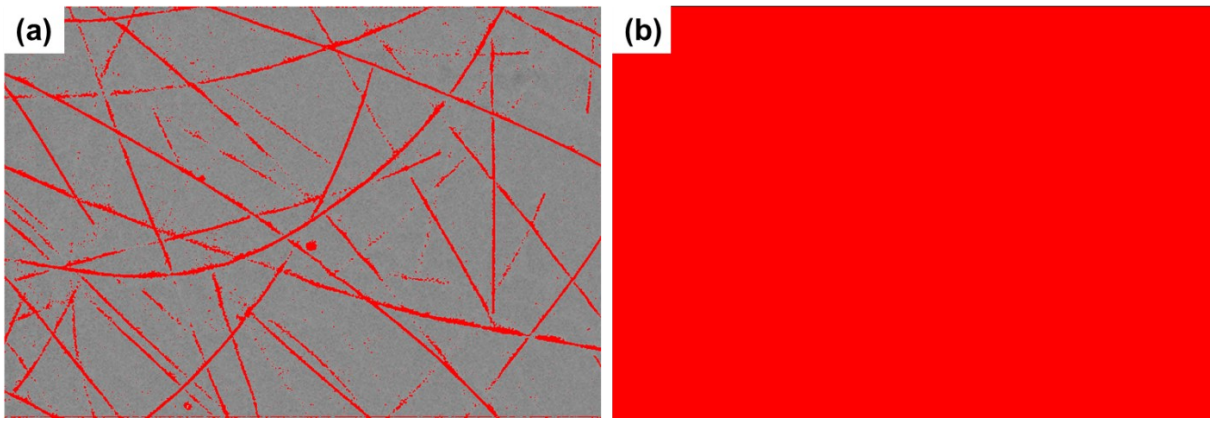

Figure S3. ImageJ analysis images of (a) AP and (b) MAP.

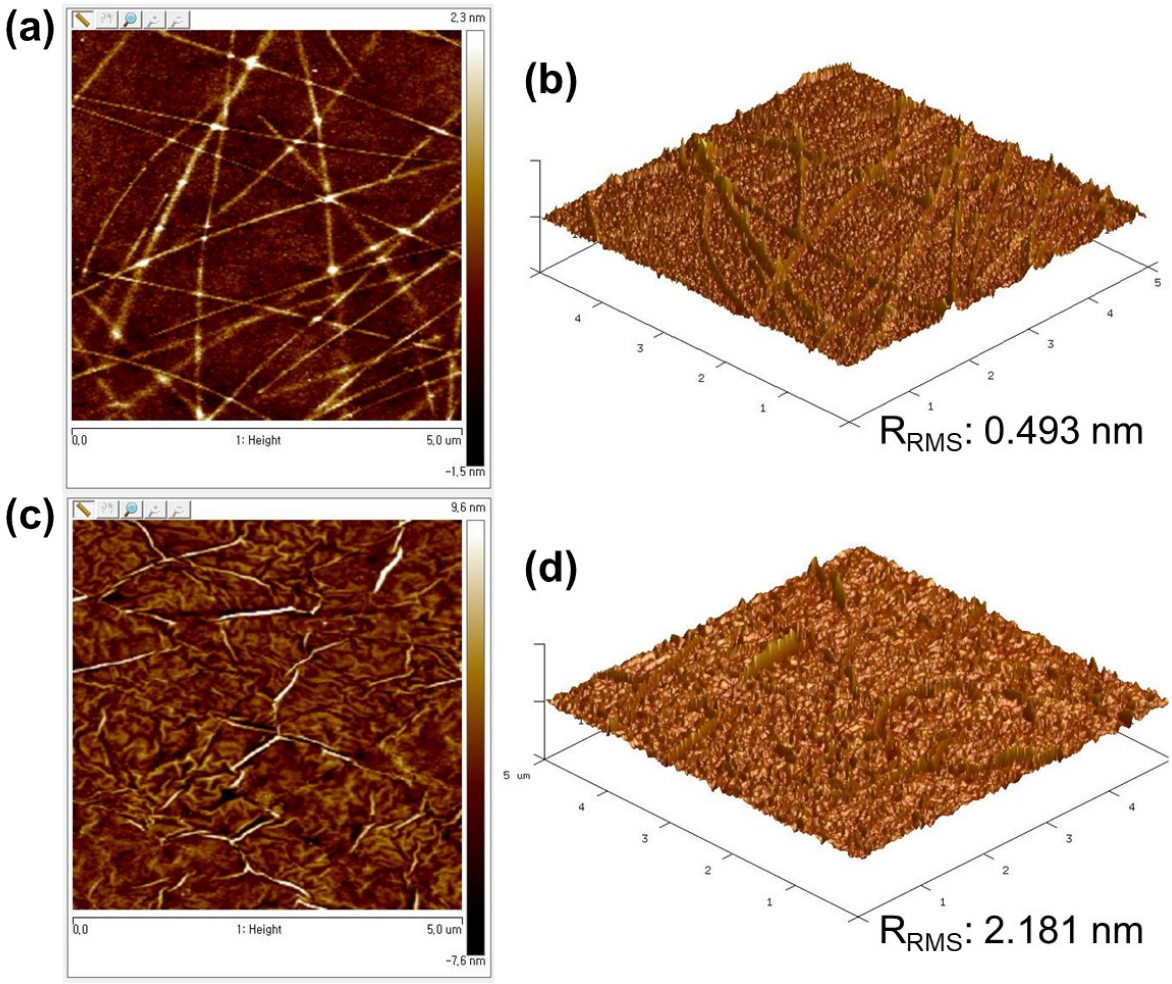

Figure S4. AFM micrographs of (a) and (b) AP and (c) and (d) MAP. (a) and (c) show top view images and (b) and (d) show tilt view images.

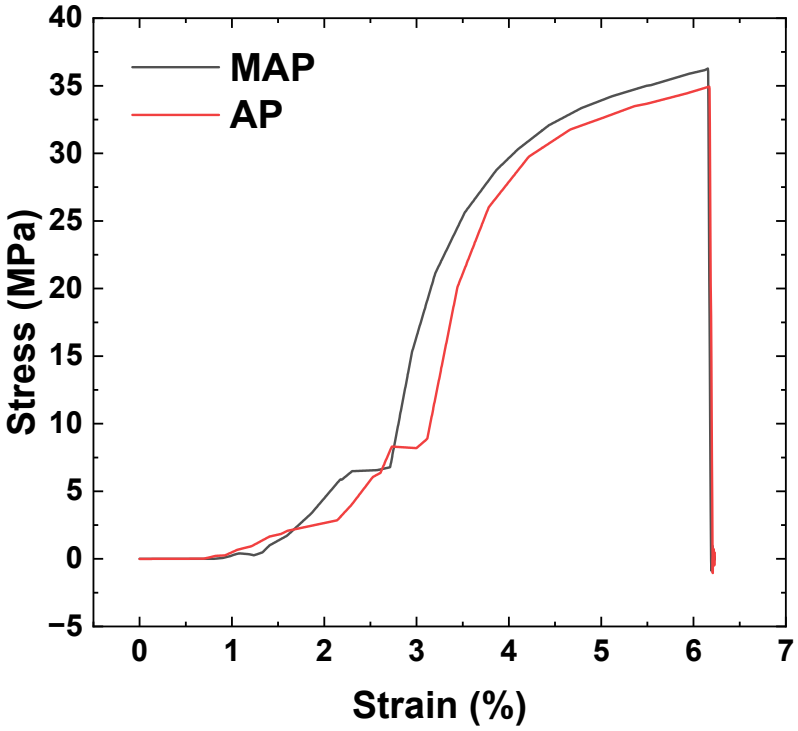

Figure S5. Stress-strain curves for MAP and AP.

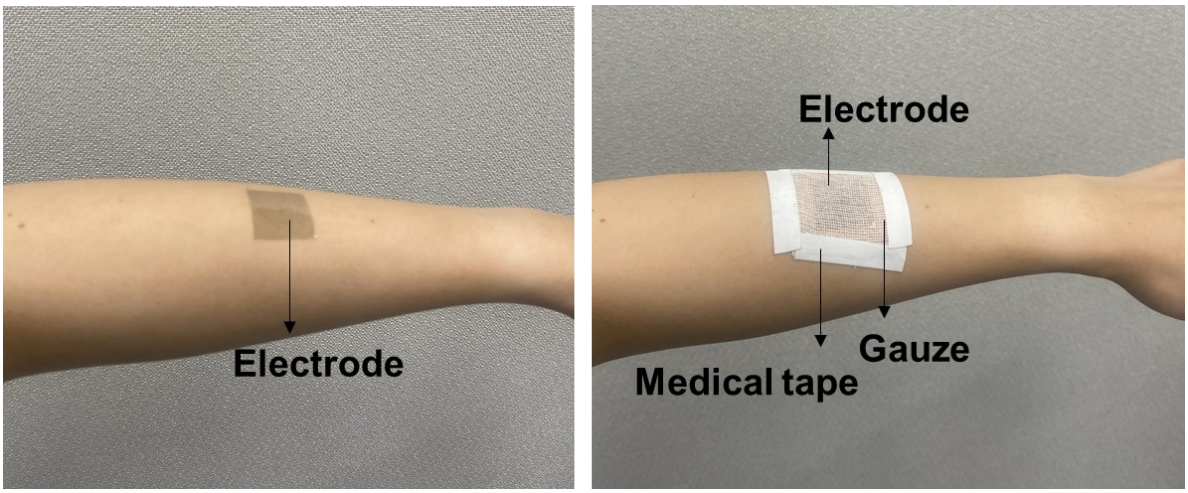

Figure S6. Photographic image of MAP attached to the skin with a gauze and medical tape.

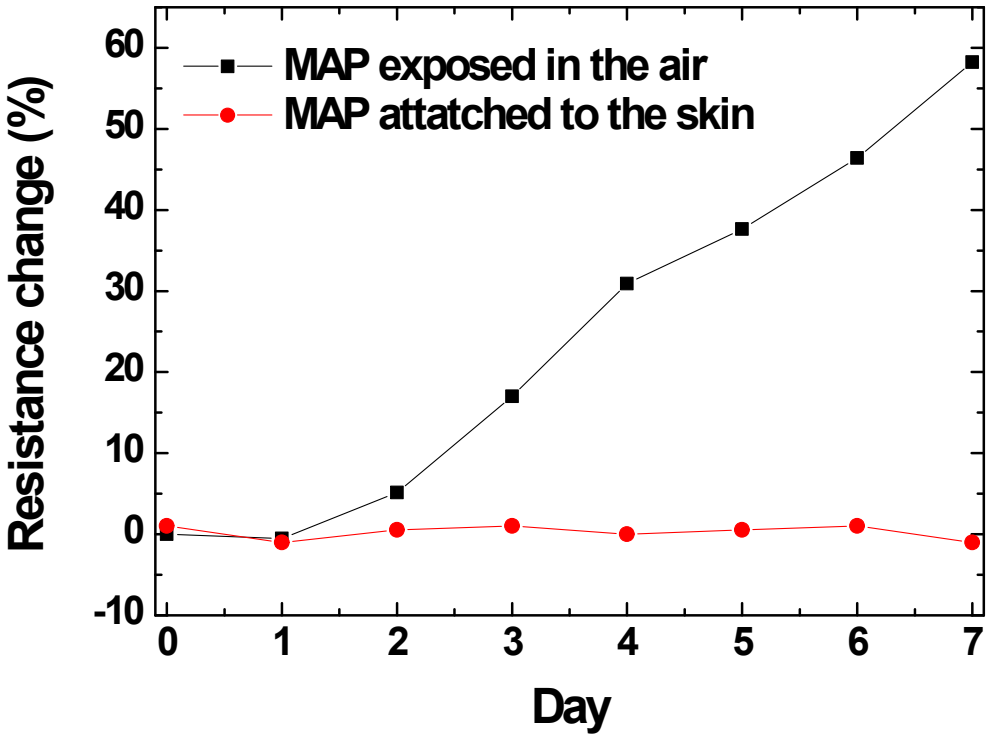

Figure S7. The resistance change of MAP exposed in the air (black line) and attached to the skin (red line) for 7 days.

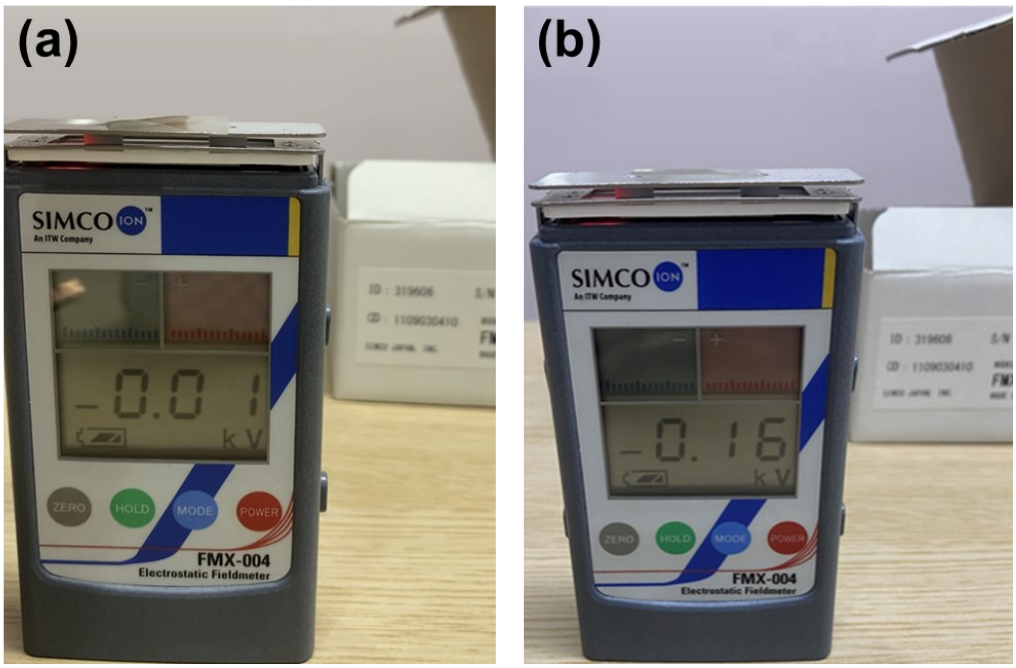

Figure S8. Digital images measuring surface potential of (a) AP and (b) MAP.

Video S1. Demonstration of the robust adhesion properties of the MAP electrode. The video illustrates the steadfast adherence of the MAP electrode to the dorsum of the hand. Notably, the MAP electrode maintains its position even when the hand is inverted and subjected to vigorous shaking, exemplifying the superior electrostatic adhesion property of the electrode to the human skin.

Video S2. Observation of the adhesion properties of the AP electrode. This video showcases the comparative lack of adhesion of the AP electrode to the dorsum of the hand. Upon initial placement, the AP electrode fails to maintain its position when the hand is inverted. Despite attempts to secure it, the AP electrode quickly detaches with movement, as seen during a simple hand wave.