Polypyrrole−MXene Coated Textile-Based Flexible Energy Storage Device

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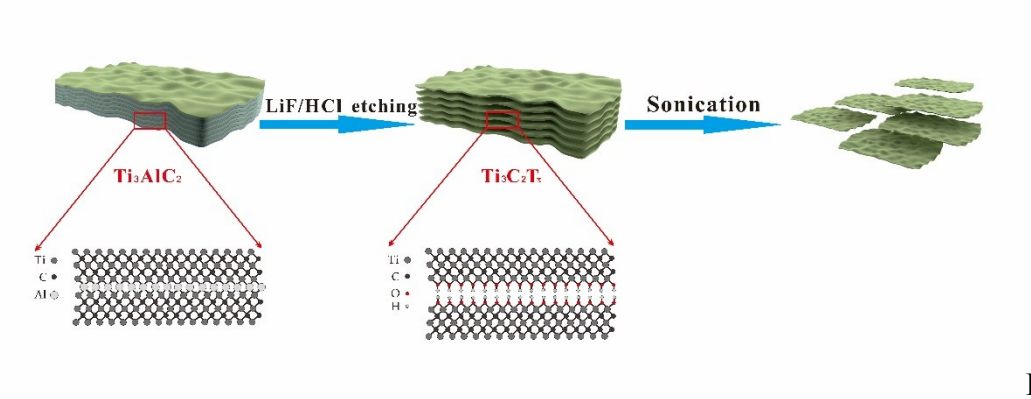

Figure S1. Schematic of the synthesis route to $Ti_3C_2T_x$ MXene nanosheets.

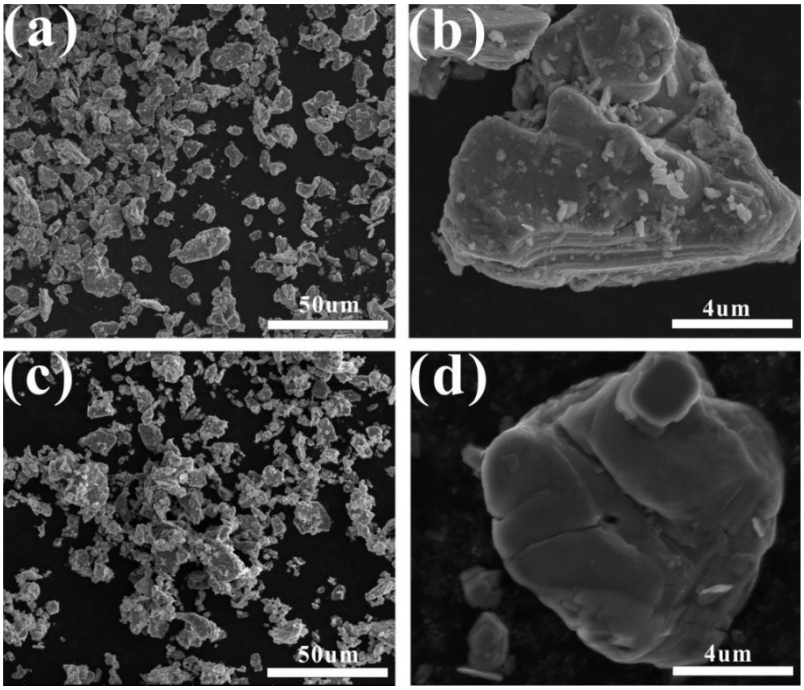

Figure S2. The typical SEM images of Ti_3AlC_2 MAX phase.

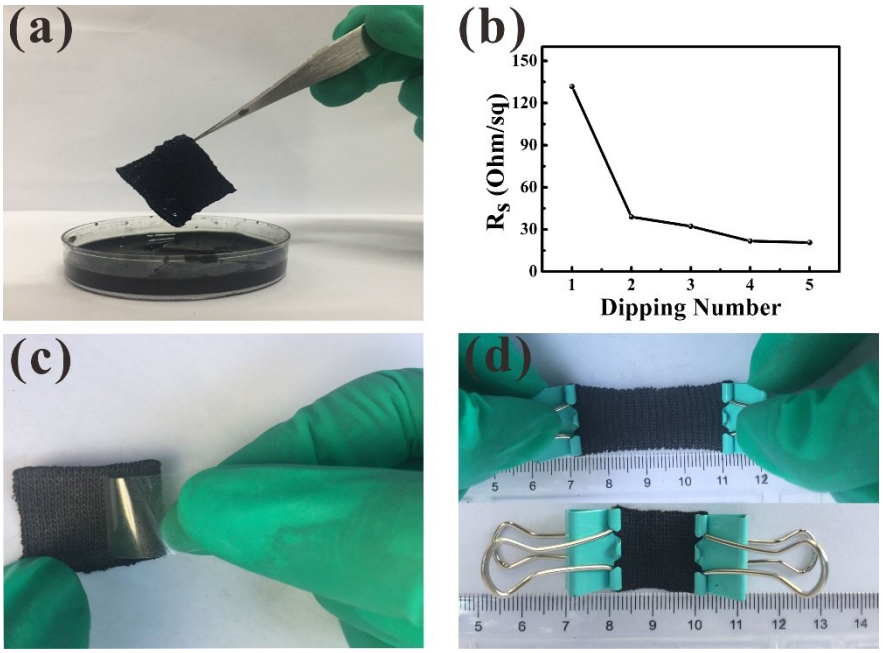

Figure S3. (a) The optical image of MXene-based fabric. (b) The curve shows the relation of square resistance verse soaking times. (c) MXene nanosheets tighly coated on the surface of fabric. (d) The MXene-based fabric electrode displays good stretchable property.

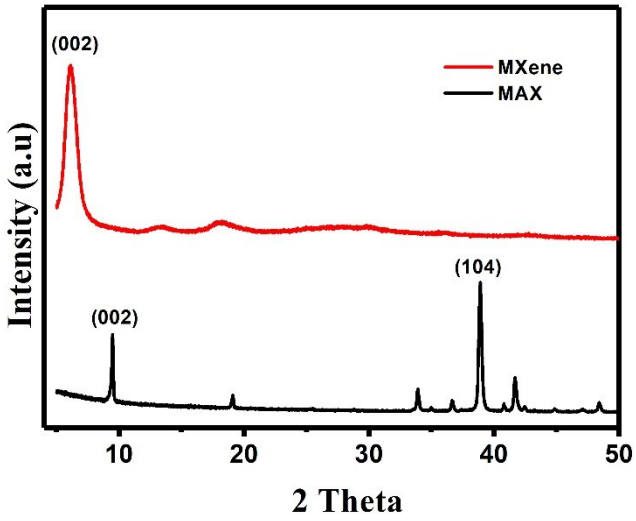

Figure S4. XRD patterns of the MAX and MXene. It is showed that (002) peak at ~9° related to MAX phase shifted towards lower angles (~6°) and the (104) at ~ 39° peak disappeared, confirming successfully etching away of Al layers and forming MXene.

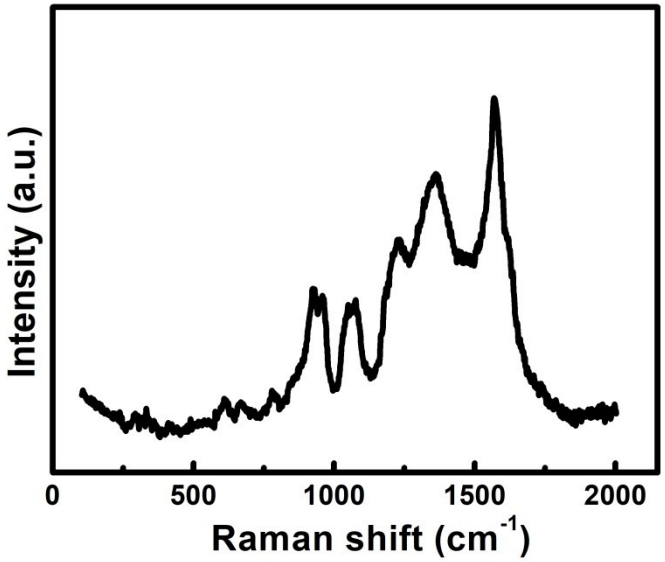

Figure S5. The Raman spectrum of PPy.

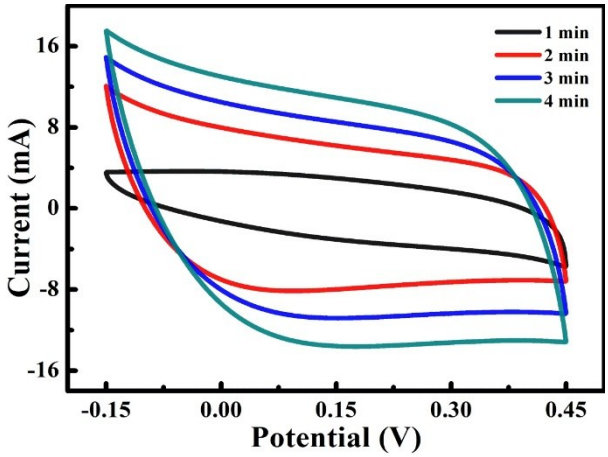

Figure S6. The CV curves of PPy-MXene coated fabric electrode with different plating time.

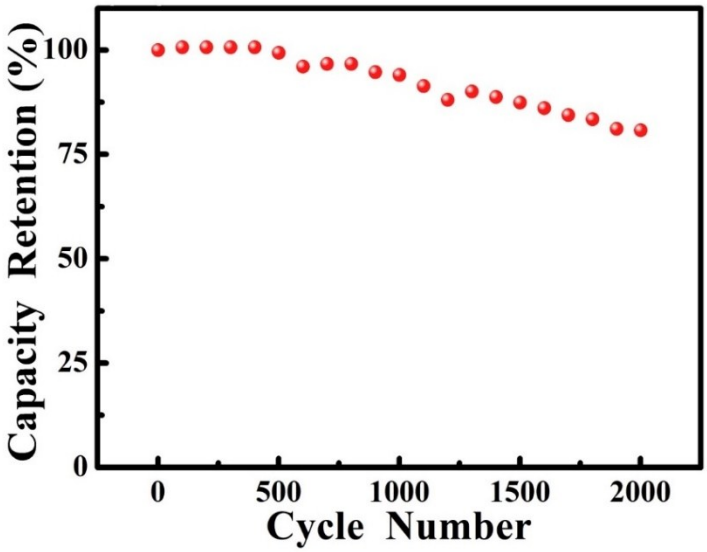

Figure S7. The cyclic performances of symmetrical solid-state supercapacitor based on MXene-PPy textile.

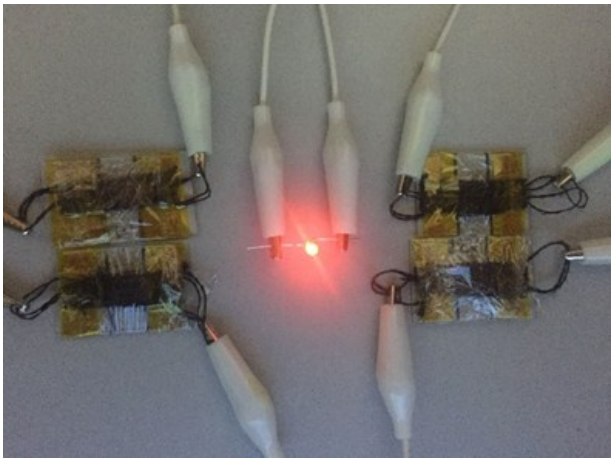

Figure S8. The photograph of the MXene-based textile supercapacitor in series can lighten the LED bulb.