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## **Supporting Information**

## Multilayer-Structured Transparent MXene/PVDF Film with Excellent Dielectric and Energy Storage Performances

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Fig. S1 Surface SEM images of MXene nanosheets on PVDF film with low (a) and (b) high magnification, where  $Ti_3C_2T_x$  nanosheets are marked with green dotted line. (c) The elements mapping images of carbon (C), fluorine (F), oxygen (O) and Titanium (Ti) in the area marked with green dotted line.



Fig. S2 The energy-dispersive X-ray spectroscopy (EDS) spectrum of MXene/PVDF film