

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: The MXene-VAF, MXene-PET and MXene/PI films were placed in an aqueous solution and subjected to ultrasonic treatment to verify the bonding strength between the MXene and the substrate.

File Name: Supplementary Movie 2

Description: After the MXene/PI film was immersed in liquid nitrogen and bent, when it was taken out, it was still able to withstand repeated bending and folding without breaking.