

Electronic Supporting Information

A novel multifunctional flame retardant MXene/nanosilica hybrid for poly (vinyl alcohol) with simultaneously improved mechanical properties

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Table S 1 The variance and standard deviation of PHRR in PVA and its flame retardant composites.

Samples	s ² of PHRR	s of PHRR
PVA	1.745	1.321
MXene/PVA	5.946	2.438
m-MXene/PVA	2.816	1.678

Table S 2 Tensile modulus of PVA and its nanocomposites.

Samples	Tensile modulus(Mpa)
PVA	1790.01
MXene1/PVA	1830.89
m-MXene1/PVA	1975.24
MXene2/PVA	2183.07
m-MXene2/PVA	2278.98

Table S 3 The variance and standard deviation of Tensile Strength and Elongation at Break in PVA and its flame retardant composites.

Samples	s ² of Tensile Strength	s of Tensile Strength	s ² of Elongation at Break	s of Elongation at Break
PVA	2.234	1.495	16.222	4.028
MXene/PVA	7.642	2.764	42.667	6.532
m-MXene/PVA	2.852	1.689	21.556	4.643

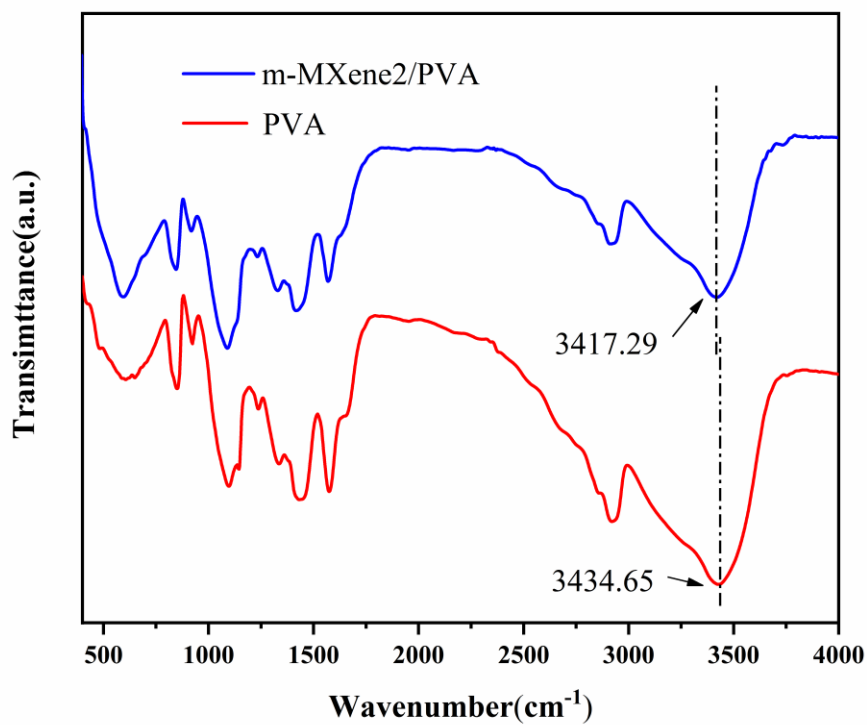


Figure S 1 FTIR of PVA and its composite.

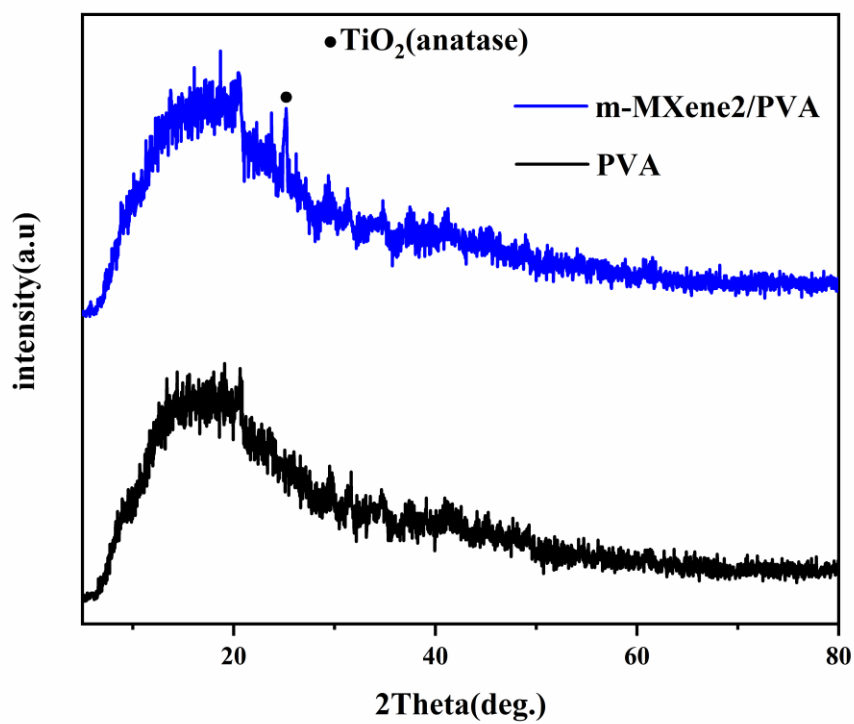


Figure S 2 XRD of the char residues for PVA and m-MXene2/PVA.