Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information for Publication

Ultrahigh discharged energy density achieved in inhomogeneous PVDF dielectric composite filled with 2D MXene nanosheets via interface engineering

Yefeng Feng, Qihuang Deng*, Cheng Peng*, Jianbing Hu, Yandong Li*, Qin Wu, Zhichao Xu

The composition of PVDF was characterized through ^{1}H NMR and GPC results as exhibited in Fig. S1. In Fig. S2, the surface morphology of MXene-2 was achieved through SEM measurements. The breakdown strength results of gradient two-layer composites (including 2-1 and 2-0.1) and sandwich PVDF/MXene-2/PVDF composite (namely 0-2-0) were shown in Fig. S3. The results further confirmed the superiority of 2-1-0.1 sample at high breakdown property. The effect of various MXene contents on dielectric constant (@100Hz) of gradient sandwich nanocomposites (including 3-1-0.1, 2-1.5-0.1 and 2-1-0.5 samples) was displayed in Fig. S4.

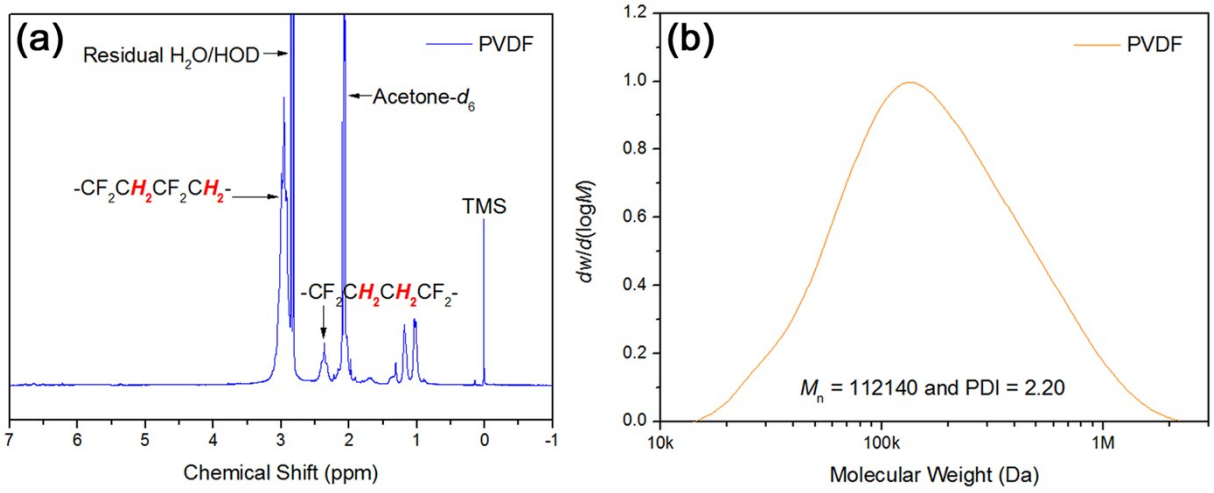

Figure S1. (a) ^{1}H NMR and (b) GPC of PVDF, respectively.

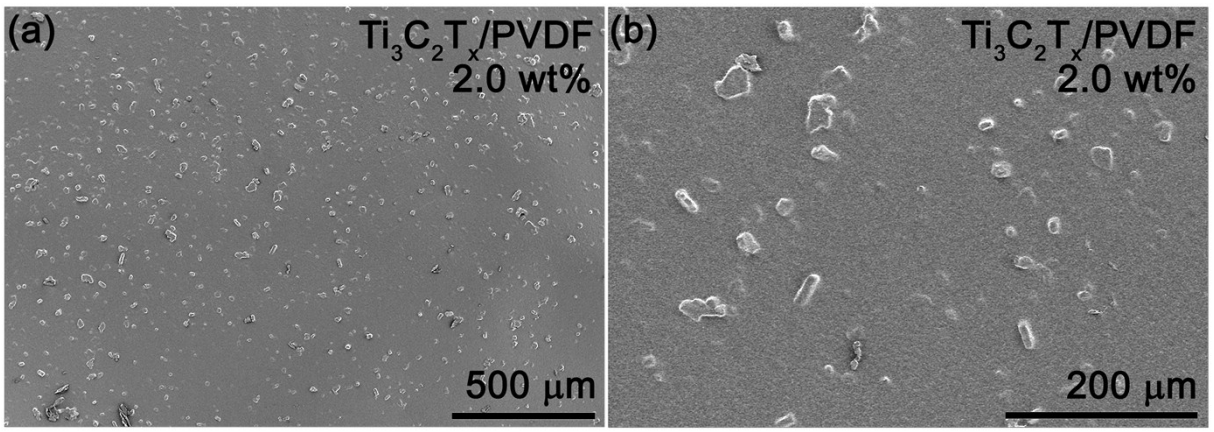

Figure S2. Surface SEM of MXene-2 film with (a) low and (b) high magnification.

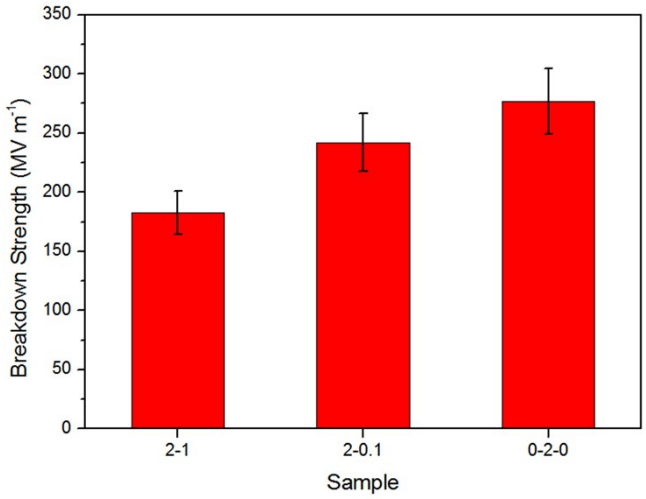

Figure S3. Breakdown strength results of 2-1, 2-0.1 and 0-2-0 samples.

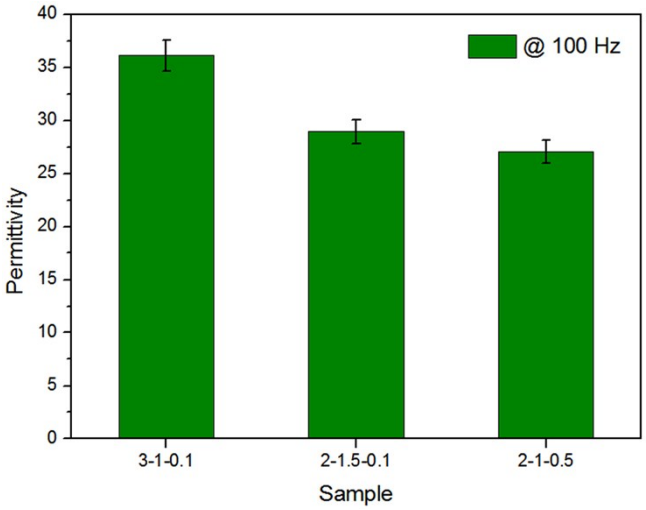

Figure S4. Dielectric constant of 3-1-0.1, 2-1.5-0.1 and 2-1-0.5 samples at 100 Hz.