Highly boosted discharged energy density of polymer nanocomposites via novel hybrid structure as fillers

Zhongbin Pan*^a, Shuang Xing^a, Haitao Jiang^c, Jinjun Liu^{*a}, Shuangwu Huang^a, and Jiwei Zhai^{*b}

^aSchool of Materials Science and Chemical Engineering, Ningbo University, Ningbo, Zhejiang, 315211, China.

^bSchool of Materials Science & Engineering, Tongji University, 4800 Caoan Road, Shanghai 201804, China.

°College of Science, Donghua University, Shanghai 201620, China.

*E-mail: <u>panzhongbin@163.com</u> (Zhongbin Pan), apzhai@tongji.edu.cn (Jiwei Zhai), liujinjun1@nbu.edu.cn (Jinjun Liu)

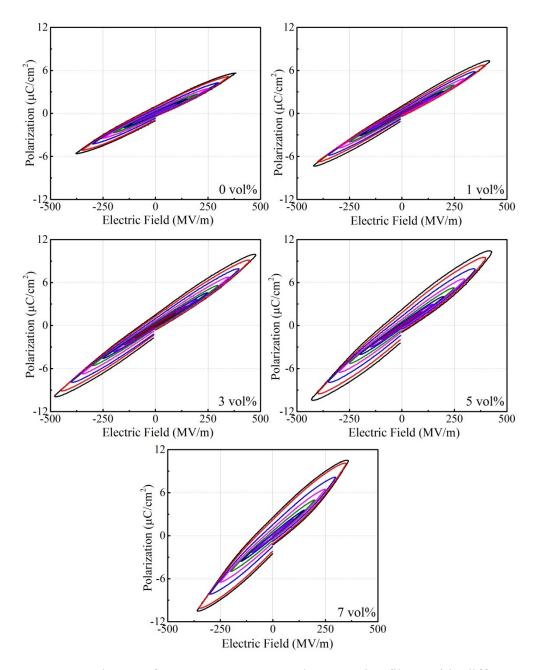


Figure S1 P-E loops of pure PVDF-HFP and composite films with different 1D ABPAs contents.

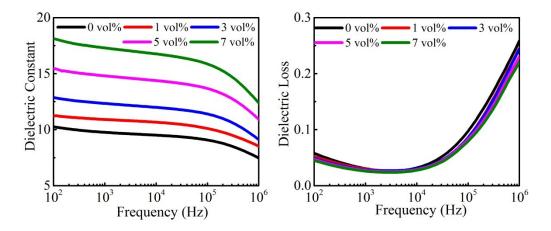


Figure S2 Dielectric constant and dielectric loss dependence of frequency for pure PVDF-HFP and composite films with different 1D Bs contents.

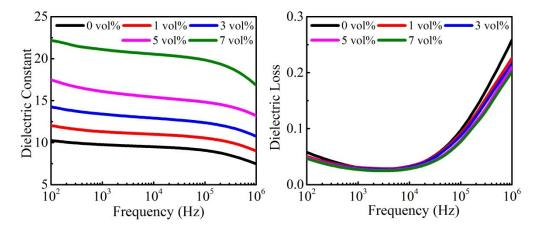


Figure S3 Dielectric constant and dielectric loss dependence of frequency for pure PVDF-HFP and composite films with different 1D ABs contents.

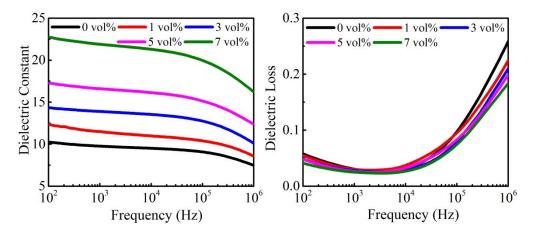


Figure S4 Dielectric constant and dielectric loss dependence of frequency for pure PVDF-HFP and composite films with different 1D ABPs contents.

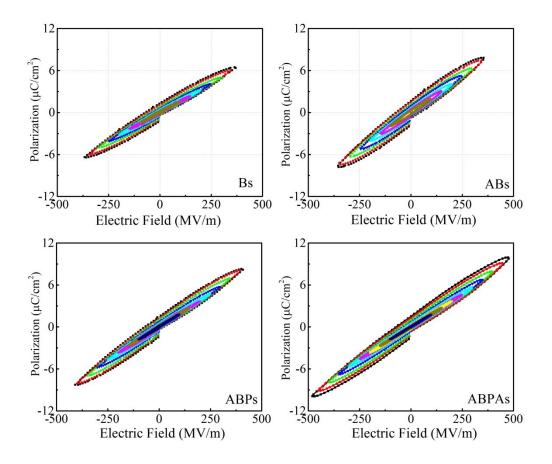


Figure S5 P-E loops of composite films with different structure fillers of 1D Bs, 1D ABs, 1D ABPs, and 1D ABPAs.

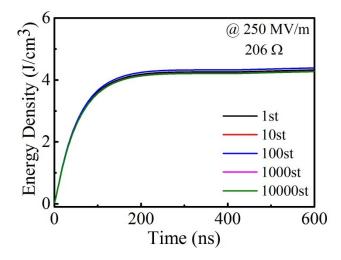


Figure S6 Cycle performance of 1D ABPAs/P(VDF-HFP) composite films under 250 MV/m at room temperature.