

Supplementary Information

Structural, ferroelectric and electro-caloric properties of P(VDF-TrFE) based nanocomposites tuned by the geometries of barium titanate nanofillers

Zhi-Yuan Jiang¹, Guang-Ping Zheng^{1,*}, Xiu-Cheng Zheng^{2,*}, and Hao Wang^{3,*}

¹ Department of Mechanical Engineering, Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, China;

² College of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou 450001, China;

³ Institute of Nanosurface Science and Engineering, Shenzhen University, Shenzhen 518060, China;

* Correspondence: mmzheng@polyu.edu.hk; zhxch@zzu.edu.cn; whao@szu.edu.cn

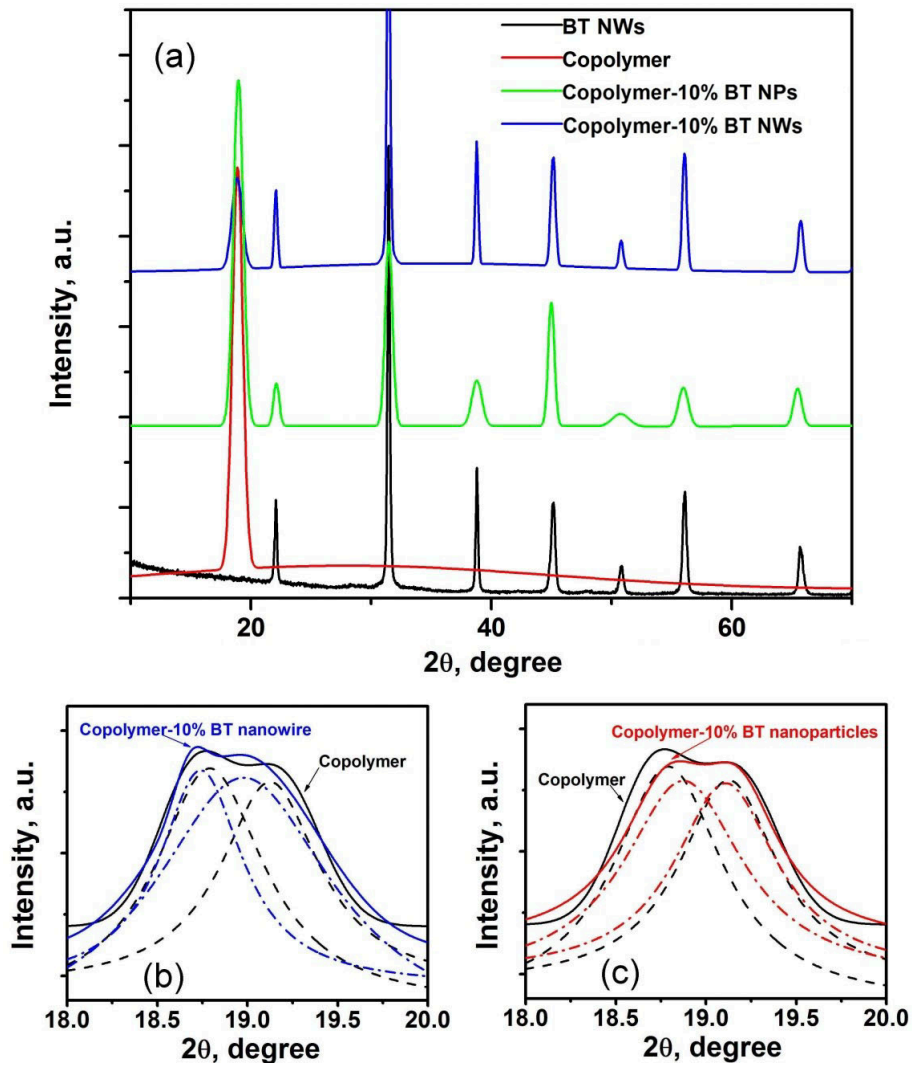


Figure S1. (a) The XRD patterns of BT nanowires, P(VDF-TrFE) and P(VDF-TrFE)-BT nanocomposites containing BT nanowires or BT nanoparticles. (b) The effects of BT nanowires on the (110) peaks of P(VDF-TrFE) matrix. (c) The effects of BT nanoparticles on the (110) peaks of P(VDF-TrFE) matrix.

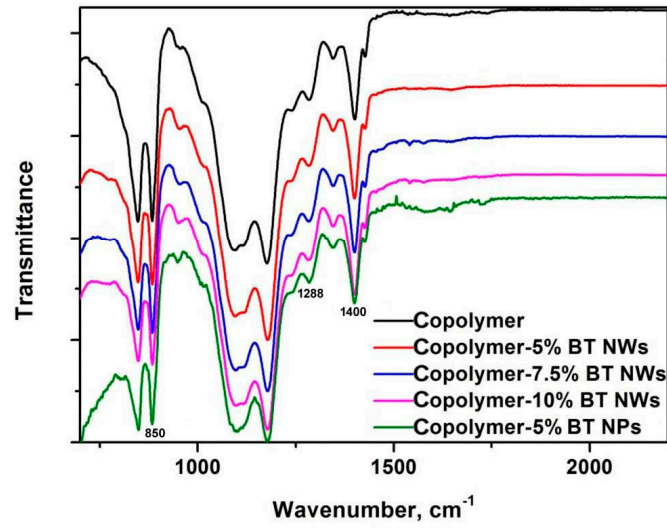


Figure S2. The FT-IR spectra of P(VDF-TrFE) and P(VDF-TrFE)-BT nanocomposites containing BT nanowires (NWs) or BT nanoparticles (NPs). The signals corresponding to the polar β phase in P(VDF-TrFE) are indicated.

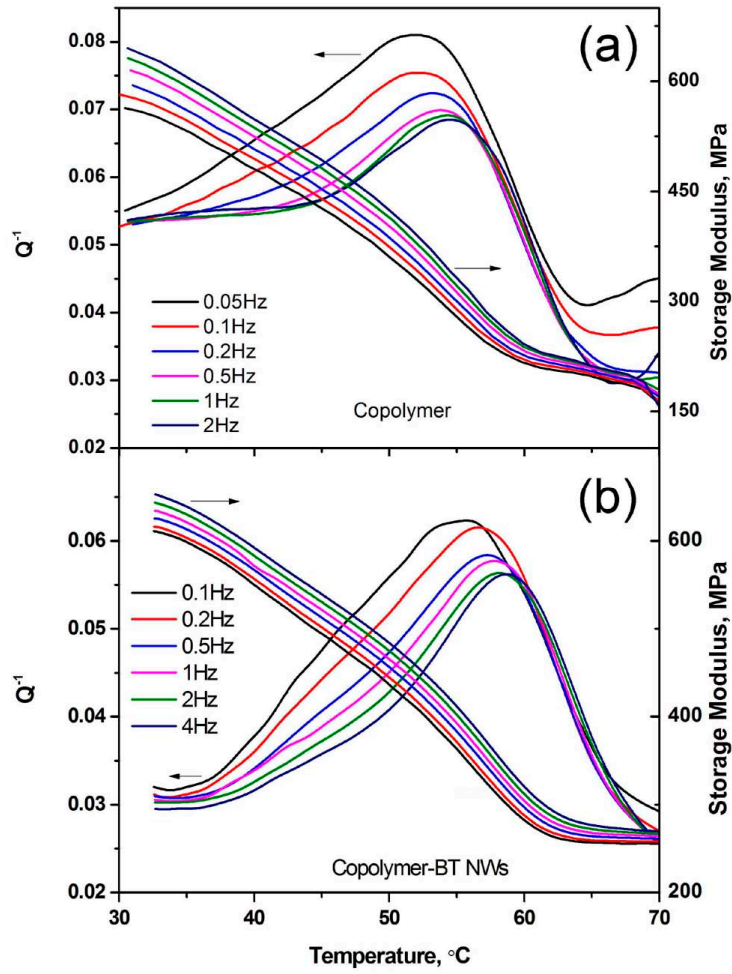


Figure S3. Mechanical loss (Q^{-1}) and storage modulus of P(VDF-TrFE) (a), and P(VDF-TrFE)-BTNW nanocomposite containing 5% volume fraction of BT nanowires (b).