

## Supporting Information

### Effect of Particle Size on the Origin of Electromechanical Response in BaTiO<sub>3</sub>/PDMS Nanogenerators

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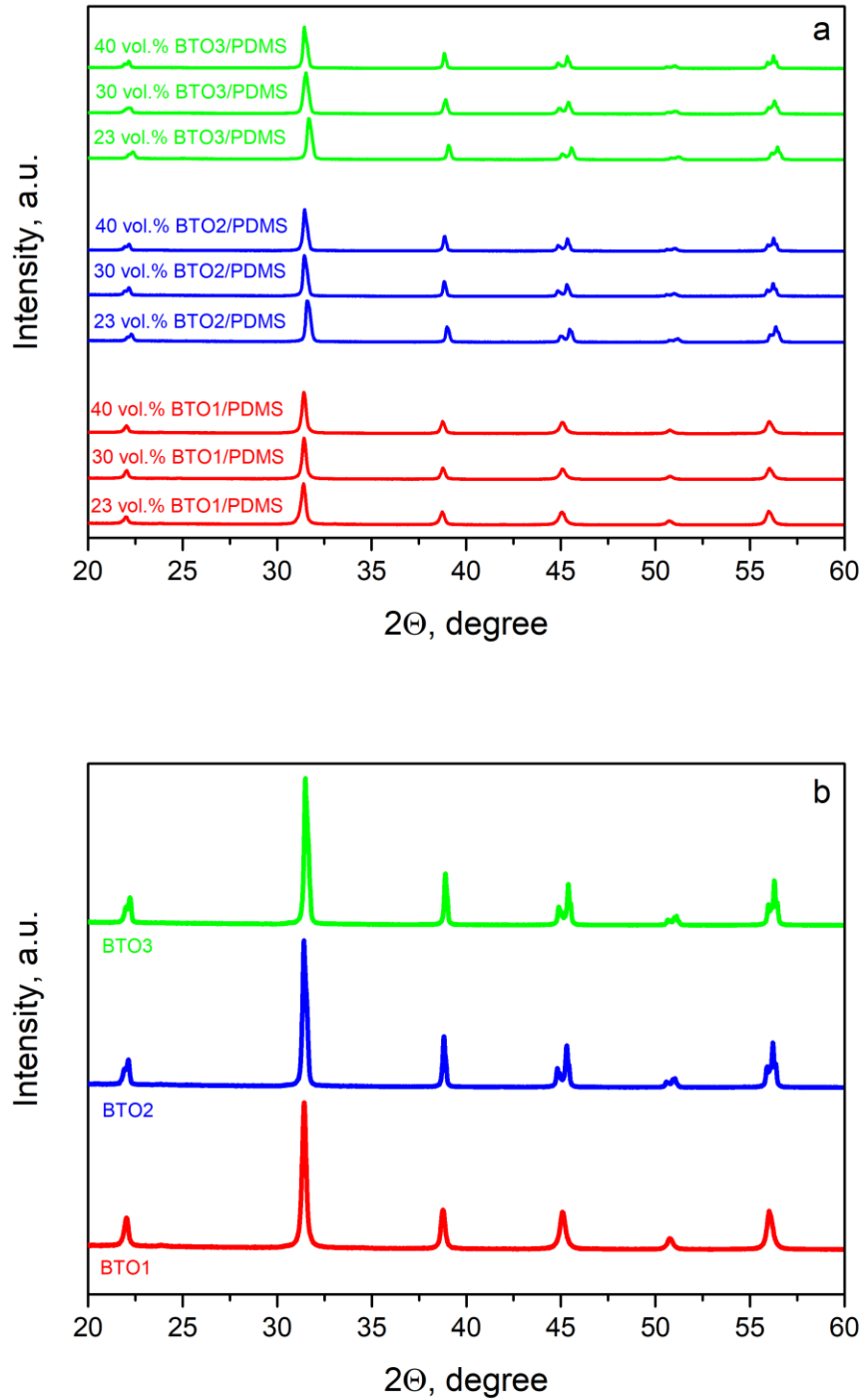
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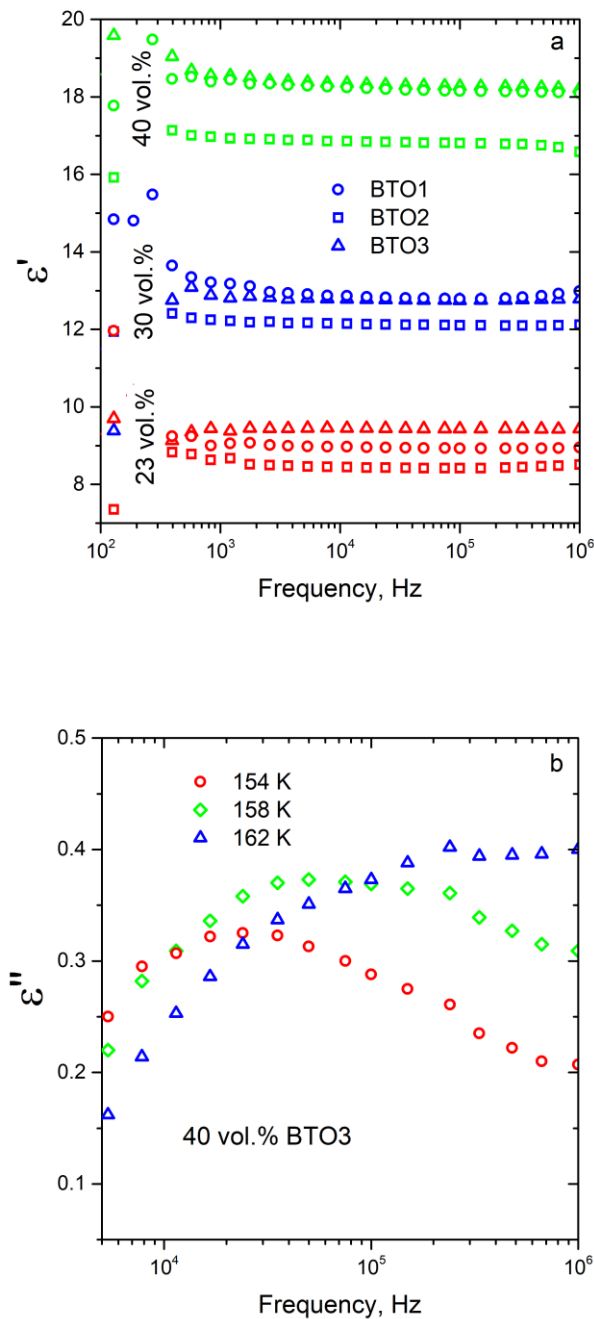
1. XRD patterns of BTO/PDMS composites and BTO powders.
2. Frequency spectra of the dielectric permittivity.
3. Output current signals from the 23 vol.% BTO/PDMS composite at frequencies from 1 to 10 Hz.
4. Profiles of output current signals for BTO/PDMS composites.
5. Profiles of output voltage signals for BTO/PDMS composites.

## 1. XRD patterns of BTO/PDMS composites and BTO powders



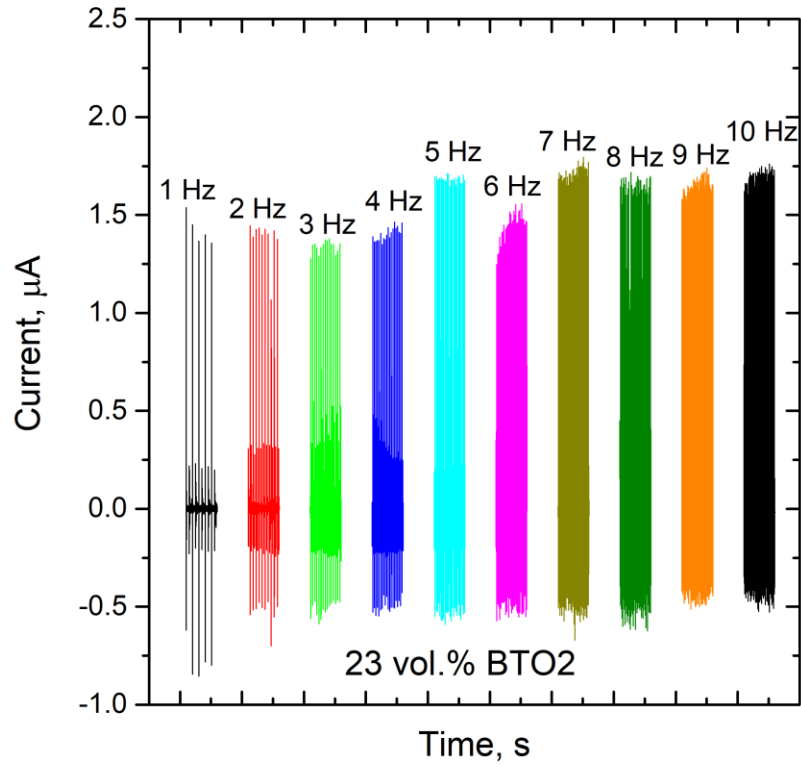
**Figure S1.** XRD patterns for (a) 23, 30, and 40 vol.% BTO/PDMS composites and (b) BTO powders.

## 2. Frequency spectra of the dielectric permittivity



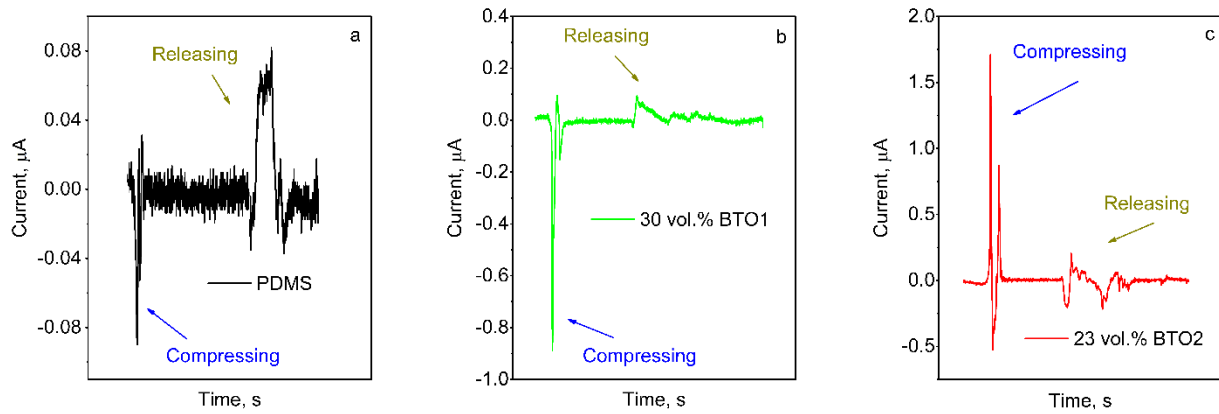
**Figure S2.** (a) Frequency dependencies of the real part of the dielectric permittivity at room temperature for 23, 30, and 40 vol.% BTO/PDMS composites. (b) Frequency dependencies of the imaginary part of the dielectric permittivity at different temperatures for the 40 vol.% BTO3/PDMS composite.

**3. Output current signals from the 23 vol.% BTO2/PDMS composite at frequencies from 1 to 10 Hz**



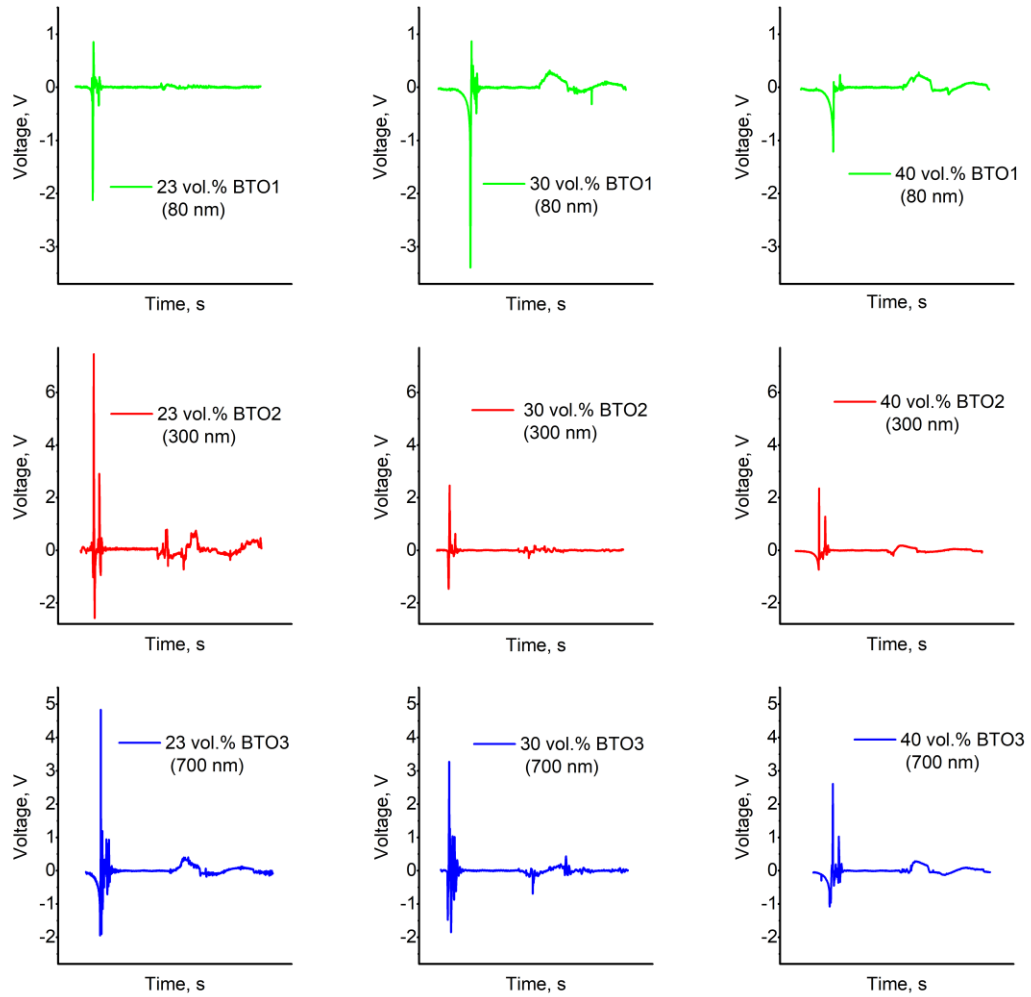
**Figure S3.** Output current signals generated by the 23 vol.% BTO2/PDMS sample at different frequencies from 1 to 10 Hz.

#### 4. Profiles of output current signals for BTO/PDMS composites



**Figure S4.** Examples of output current signal profiles corresponding to a 20 N-blow at 5 Hz: (a) pure PDMS, (b) 30 vol.% BTO1/PDMS and (c) 23 vol.% BTO2/PDMS composites.

## 5. Profiles of output voltage signals for BTO/PDMS composites



**Figure S5.** Profiles of output voltage signals corresponding to a 20 N-blow at 5 Hz for all BTO/PDMS samples.