

Abstract Submitted
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Nanoconfined Ferroelectricity in Polymers¹ LEI ZHU, Department of Macromolecular Science and Engineering, Case Western Reserve University, FANGXIAO GUAN, JING WANG, Polymer Program, Institute of Materials Science and Department of Chemical, Materials and Biomolecular Engineering, University of Connecticut, QING WANG, Department of Materials Science and Engineering, Pennsylvania State University — In this presentation, a low loss polystyrene (PS) was grafted as side chains onto the P(VDF-CTFE) main chain. After PVDF crystallization, dielectric PS side chains were segregated to the crystalline-amorphous interface, forming a finite confinement layer for ferroelectric PVDF crystals. We speculated that less space charge was induced during electric poling because of the nanoscale confinement effect. Consequently, a fast discharge speed, relatively high energy density, and low losses were achieved.

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