Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Confinement-Induced Fast Discharge and Low Dielectric Losses in Ferroelectric PVDF Graft Copolymers[1] LEI ZHU, FANGXIAO GUAN, ZHONGZHE YUAN, Polym. Program, Inst. of Mater. Sci. and Dept. of Chem., Mater. and Biomolecular Eng., University of Connecticut, Storrs, CT 06269-3136 — The relatively high dielectric loss of poly(vinylidene fluoride) (PVDF) and its copolymers limits their range of application as a high energy density capacitor material, although a high electric energy density was recently reported for millisecond discharge. In this work, we report time independent (or fast) discharge and reduced losses in ferroelectric poly(vinylidene fluoride) (PVDF) graft copolymer dielectric films. Experimental results suggested that the fast discharge and low losses were results of an increased amorphous content and nanoscale confinement of ferroelectric PVDF crystals.

[1]This work is supported by ONR (N00014-05-1-0338).

Lei Zhu
Polym. Program, Inst. of Mater. Sci. and Dept. of Chem., Mater. and Biomolecular Eng., University of Connecticut, Storrs, CT 06269-3136

Date submitted: 18 Nov 2008 Electronic form version 1.4