

Abstract Submitted  
for the MAR17 Meeting of  
The American Physical Society

**Electrospinning of Polymer Blend and Core Shell Polymeric Structures** OSCAR J. GUERRERO, JAVIER MACOSSAY TORRES, SERVANDO A. GARZA, DORINA CHIPARA, MIRCEA CHIPARA, The University of Texas Rio Grande Valley — Electrospinning is a relatively new technique to obtain polymer nanofibers. The availability of submicron fillers makes possible the production of one dimensional nanocomposites. The diameter of polymer nanofibers and related structures is ranging between from  $10^{-4}$  m to  $10^{-9}$  m. The production of polystyrene (PS) nanofibers, polyvinylidene fluoride (PVDF) nanofibers, PS-PVDF blend nanofibers and of PS-PVDF nanofibers with core-shell morphology is reported. The production of PS-PVDF blend nanofiber is possible as a common solvent dimethylacetamide has been used to obtain the polymeric solutions. The mats have been dried in an oven at 75 °C for 24 hours. Solvent removal was confirmed by TGA. The diameters and lengths distributions of the as obtained nanofibers have been determined by optical microscopy and scanning electron microscopy. Structural studies on the as obtained nanofibers were performed by Raman spectroscopy and Wide Angle X-Ray spectroscopy, and Differential Scanning Calorimetry. Attention will be focus on the conversion of the alpha phase PVDF (paraelectric) into the beta phase (ferroelectric).

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Date submitted: 09 Nov 2016

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