

Abstract Submitted
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Ferroelectric-Ceramic Nanoparticle Composite Materials Synthesized via Physical Vapor Deposition ANDREW PIERCE, Physics and Astronomy, Northern Arizona University, Flagstaff, AZ — This study documents an inquiry into the preparation of ferroelectric polymer-ceramic nanoparticle composite films via physical vapor deposition. The combination of these types of materials has developed an interest in the material science community due to their incredible potential as a dielectric material for capacitor applications. Through the course of this particular investigation, polyvinylidene fluoride (PVDF) containing nanoparticles of titanium dioxide (TiO_2) were synthesized inside a vacuum. In this study, various parameters of physical vapor deposition were investigated so as to better manipulate the composition of the PVDF/ TiO_2 . The resultant composition and distribution of the films were analyzed using x-ray photoelectron spectroscopy (XPS), scanning force microscopy (SFM), and energy dispersive x-ray analysis (EDX).

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