

Public Abstract

First Name:James

Middle Name:Arthur

Last Name:VanGordon

Adviser's First Name:Scott

Adviser's Last Name:Kovaleski

Co-Adviser's First Name:

Co-Adviser's Last Name:

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Title:CHARACTERIZATION OF A LITHIUM NIOBATE PIEZOELECTRIC TRANSFORMER

Particle accelerators require high voltages to accelerate the particle beams. Piezoelectric transformers (PTs) are capable of generating the high accelerating potentials required for many charged-particle beam applications. However, the PTs need to be characterized during operation as an accelerator for such beam loads. PT characteristics such as internal stress, electric field, and electric potential can provide insight into the optimal operating conditions for a given application. This dissertation presents a variety of PT characterization results under varied PT operating conditions.