

Abstract Submitted  
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**Reduction of Radiation Damage in Lead-Glass by Thermal Annealing** FERNANDO TORALES - ACOSTA, State Univ of NY- Stony Brook, BOGDAN WOJTSEKHOWSKI, Thomas Jefferson National Accelerator Facility — The elastic electric form factor (G<sub>E</sub>p) experiment at Jefferson Lab aims to measure properties that directly relate to the charge and current distributions of the proton. Electrons from the experiment are detected by an electromagnetic (EM) calorimeter based on lead-glass blocks (E<sub>Cal</sub>). Due to its density and transparency, lead-glass is a good material to be used calorimeters. The material, however, suffers from radiation damage and a loss of transparency during operation. The transparency can be recovered through thermal annealing, but the timescale and affect of temperature on the annealing process in lead-glass need further investigation before implementation in future G<sub>E</sub>p experiments. A transparency measurement was conducted by shining a low power laser through a block of damaged lead-glass as the block is heated and its transmission monitored. Additionally, blocks of lead-glass were placed in an oven as temperature-time profiles as well as the reduction factor of damage were recorded. From these temperature profiles, we were able to obtain an expression for the characteristic annealing time as a function of temperature modeled after the electrical conductivity of glass.

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