

Abstract Submitted
for the TS4CF08 Meeting of
The American Physical Society

Effects of Radiation Induced Conductivity on Samples Charged by Particle Beams J.R. DENNISON, RYAN HOFFMANN, JENNIFER ROTH, ALEC SIM, Utah State University — The electron emission and electron transport properties of highly insulating materials depend on both the fluence and flux of incident charged particle beams. These properties are affected by the deposition, accumulation and dissipation of both charge and energy in the material. We describe the effects of these processes on three distinct experiments: (i) the decay of charge deposited within thin film samples by high energy electron and proton beams; (ii) internal arcing of highly charged, thin film insulators by medium- to high-energy electron beams; and (iii) the modification of total electron emission yields as charge is accumulated by low- to medium-energy electron probe pulses. In each case, the radiation induced conductivity as a result of absorbed energy dose from the particle beam enhances electron transport and alters the effects of charging.

J.R. Dennison
Utah State University

Date submitted: 23 Sep 2008

Electronic form version 1.4