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Instrumentation for Measuring Radiation Induced Conductivity of Insulating Materials JOSHUA HODGES, J. CORBRIDGE, J.R. DENNISON, R.C. HOFFMANN, J. ABBOTT, Physics Department, Utah State University, A. HUNT, R. SPAULDING, Physics Department, Idaho State University — We report on new instrumentation to measure Radiation Induced Conductivity (RIC). RIC occurs when incident ionizing radiation deposits energy in a material and excites electrons into the conduction band of insulators. Conductivity is determined by measuring the current through the thin film samples in a parallel-plate geometry under a constant applied voltage. RIC is calculated as the difference in the equilibrium sample conductivity under no incident radiation and sample conductivity under an incident flux. An accelerator beam at the Idaho Accelerator Center provides the 2-5 MeV incident flux over a range of 10^{-2} to 10^{+1} rad/sec. Measurements are taken simultaneously from 10 large thin film samples (90 cm^2). Radiation passes through a 4 mm thick stainless steel window that is used to provide a vacuum environment to prevent arcing and contamination. Detail of the instrumentation and preliminary results will be presented.

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