

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**New Approach to Image Aerogels by Scanning Electron Microscopy** FRANCISCO SOLÁ, FRANCES HURWITZ, NASA Glenn Research Center, JIJING YANG, Carl Zeiss SMT Inc. — A new scanning electron microscopy (SEM) technique to image poor electrically conductive aerogels is presented. The process can be performed by non-expert SEM users. We showed that negative charging effects on aerogels can be minimized significantly by inserting dry nitrogen gas close to the region of interest. The process involves the local recombination of accumulated negative charges with positive ions generated from ionization processes. This new technique made possible the acquisition of images of aerogels with pores down to approximately 3nm in diameter using a positively biased Everhart-Thornley (E-T) detector. Well-founded concepts based on known models will also be presented with the aim to explain the results qualitatively.

Francisco Solá  
NASA Glenn Research Center

Date submitted: 30 Nov 2010

Electronic form version 1.4