

Abstract Submitted  
for the SES13 Meeting of  
The American Physical Society

**In-situ Investigations of the Surface Microstructure Evolution of Metallic Specimens Using the Large Chamber Scanning Electron Microscope at Western Kentucky University** GRACE EGBUJOR, EDWARD KINTZEL, Western Kentucky Univeristy — An initial study into the use of the large chamber scanning electron microscope (LC-SEM) to interrogate the surface microstructure evolution of metallic specimens has been carried out. The LC-SEM located at Western Kentucky University is the largest instrument of its type at any university in the world. As such, unique measurements can be performed due to the size of its chamber and extended view of its optic system. Strain was varied for each individual specimen, and imaged using a combination of Backscattered Electrons and a Focused Ion Beam within the gauge length as well as near the grip position. Results will demonstrate the capability of the LC-SEM to carry out these types of measurements. Future measurements will include the incorporation of a in-situ uniaxial load frame for dynamic studies.

Edward Kintzel  
Western Kentucky Univeristy

Date submitted: 23 Sep 2013

Electronic form version 1.4