



Shery Welsh

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BIO:

Ms. Shery Welsh is currently pursuing a PhD in Materials Science. This work involves the grain boundary character distribution (GBCD) influences on the grain boundary oxidation and crack tip kinetics of Nickel and Nickel-based superalloys. The test specimens will be subjected to elevated temperature creep fatigue tests where dwell times, temperature and stresses will be varied to analyze the effects on grain boundary oxidation. The oxidation effects will be analyzed at random and special grain boundaries, and for random grain boundary network connectivity. This research utilizes a variety of equipment: DIC (digital image correlation system), fatigue test setup, SEM (scanning electron microscopy), EBSD (electron backscatter diffraction) and atom probe tomography (APT).

This work will be performed at the University of Alabama in Huntsville and the University of Alabama in Tuscaloosa to gain access to all equipment required for this research. Regular training sessions on the SEM/EBSD have occurred at the University of Alabama in addition to Oxford EBSD training workshops in Tuscaloosa.

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