The role of microstructural heterogeneity on fatigue lifetime variability of \( \alpha + \beta \) titanium alloys

**NEXT MEETING - Wednesday, MARCH 25, 2015**

Please join us for our next meeting at the Spaghetti Kettle, Route 5, Seneca Turnpike, Clinton NY. (315)-853-6013.

Our guest speaker will be Christopher Szczepanski, Ph.D. He joined Special Metals Corporation as a Senior Process Engineer in September of 2013. He was formerly a Materials Research Engineer with the Air Force Research Laboratory (AFRL) at Wright-Patterson Air Force Base in Dayton, OH. Dr. Szczepanski earned his Ph.D. in Materials Science and Engineering from the University of Michigan in 2008.

A recent study of fatigue crack-initiation mechanisms and their relationship to lifetime variability in bulk samples of Ti-6Al-2Sn-4Zr-6Mo has revealed that crack initiation can occur in a variety of characteristic microstructural neighborhoods. In many cases, specimens with similar crack initiation sites exhibit significantly different fatigue lifetimes and this scatter was shown to result from variability in crack initiation behavior. Initial in-situ micro-scale fatigue tests have exhibited planar slip with the basal and prism slip systems being the active deformation modes. The use of micro-scale samples enables 3D microstructural characterization of the full specimen gage volume and initial analysis of a sectioned microscale specimen will be presented. The mechanical behavior and microstructural characterization of these experiments will also be presented with an emphasis on identifying microstructurally driven cyclic damage accumulation processes leading to fatigue crack initiation.

Dinner will be served at approximately 6:30 PM followed by our speaker. Social hour will be before dinner (5:30-6:30) and consist of wine and pitchers of beer. Dinner is served family style and includes a tossed salad, Chicken Francaise, Ziti w/sauce, Utica greens, and roasted potatoes and cookies for desert.

Prices will be $15 for each ASM member/guest or student and $25 for non-members. **Reservations are due by Friday, March 20th** Please contact Pam Paulini at p paulini@twcny.rr.com or by phone at (315) 363-4025 with your reservation..........................
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