

## Interface Sliding as a Deformation Mechanism in Ti Alloys

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In this research, interface (alpha/beta) sliding has been identified as an active deformation mechanism in the recently developed a/b titanium alloy Timetal<sup>®</sup>407 (Ti-0.85Al-3.9V-0.25Fe-0.25Si-0.15O, wt.%). This deformation mechanism has rarely been reported in Ti alloys, in contrast to previous work which has identified grain boundary sliding in some cases. In this talk, the characterization of this deformation mode will be presented which involves a comparative study of the deformation behaviors in Timetal<sup>®</sup>407 and Timetal<sup>®</sup>6-4. Both alloys exhibited slip steps on their surfaces from conventional dislocation activity. However, it has been shown that Timetal<sup>®</sup>407 may also deform by a mechanism which manifests itself as sliding at alpha/beta interfaces and colony boundaries. In-situ (SEM) deformation has been performed so that the activity of the various deformation mechanisms as a function of strain has been determined. This deformation mechanism is consistent with the ability of the alloy Timetal<sup>®</sup> 407 to provide significant ductility during very high strain rate testing.