

Exploring the interactions between interfacial disconnections and grain boundary facet junctions

Douglas L. Medlin
Sandia National Laboratories
Livermore, CA 94551 USA

dlmedli@sandia.gov

Faceting of grain boundaries is an important manifestation of anisotropy in the dependence of excess interfacial free energy on boundary inclination. It is interesting to consider the interaction of the junctions between adjacent facets and other microstructural elements since this can have a strong influence on the boundary's behavior and properties and on its overall morphological evolution. In this presentation, we discuss electron microscopic observations and atomistic simulations exploring the interplay between facet junctions, dislocations, and interfacial disconnections at metallic grain boundaries. We will draw on examples from faceted $\Sigma=3$ and $\Sigma=5$ boundaries in FCC and BCC metals.

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