

Dislocation Network in a Si - NiSi₂ Interface

Illustration

This overview picture shows the "*interphase*" structure of the **NiSi₂ - Si** interface.

- In the bright patches we have a direct epitaxial relationship, the network consists of $a/2\langle 110 \rangle$ dislocations. split into partial dislocations, with extended and constricted dislocation nodes. This is exactly as we have [seen it before](#) in the small angle grain boundary in Si, except that the dislocations now are *edge* dislocations and not *screw* dislocations!
- In the darker areas the **NiSi₂** layer is *twinned* with respect to the substrate. The dislocation network is composed of the $a/6\langle 112 \rangle$ dislocation of the **DSC** lattice belonging to a $\Sigma = 3$ relation. The inset shows this network at higher magnification. This, again, is quite similar to the [splitting of the small angle grain boundary on Si](#) into a microtwin plus dislocation network.

