

In situ fracture observations of distinct interface types within a fully lamellar intermetallic TiAl alloy

Michael Burtscher^{1,a)}, Markus Alfreider¹, Klemens Schmuck¹, Helmut Clemens², Svea Mayer², Daniel Kiener¹

¹Department of Materials Science, Chair of Materials Physics, Montanuniversität Leoben, Jahnstraße 12, Leoben 8700, Austria

²Department of Materials Science, Chair of Physical Metallurgy and Metallic Materials, Montanuniversität Leoben, Roseggerstraße 12, Leoben 8700, Austria

^{a)}Address all correspondence to this author. e-mail: michael.burtscher@unileoben.ac.at

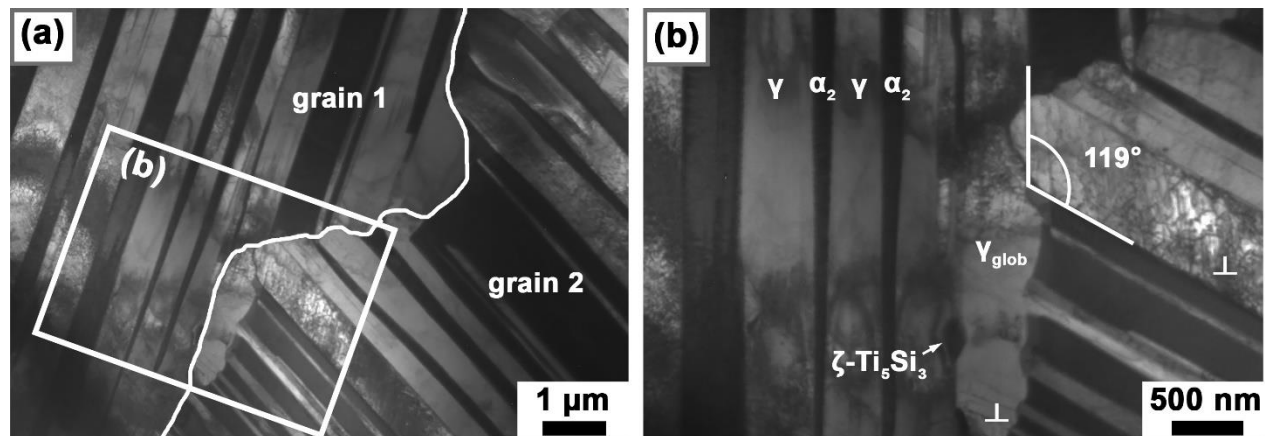


FIG. S1: (a) TEM bright-field image of two α_2/γ -colonies including a grain boundary. The insert constitutes a magnification of this grain boundary and is displayed in (b). Here a globular γ grain including a dislocation network together with an adjacent $\zeta\text{-Ti}_5\text{Si}_3$ silicide is visible. The angle between the investigated grain boundaries was determined to be 119° and the presence of dislocation networks within γ lamellae was marked with the well-established symbols.

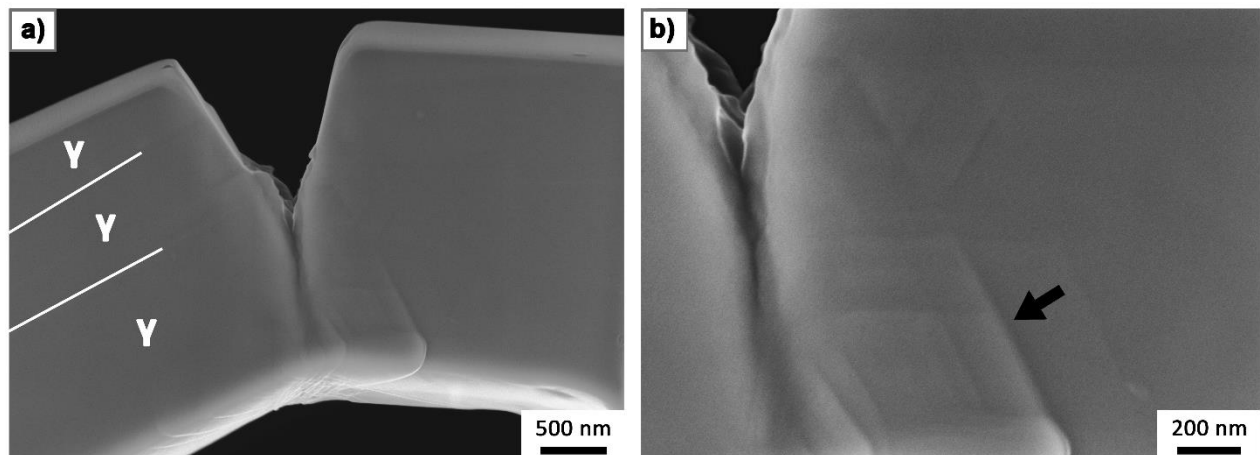


FIG. S2: (a) SEM SE image of (L)_C2 cantilevers surface after the in-situ experiment and further bending to open the crack for SEM analysis. Therefore, the presence of band-like structures on the surface are more pronounced and they are better visible as in FIG. 2 (b). (b) displays a higher magnification of the present glide bands. With a black arrow, the same band was marked as in FIG. 2 (b).