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# Strain partitioning behavior of in situ $Ti_5Si_3$/TiAl composites

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***Abstract***

For a particle-reinforced composite, strain attribute at both sides of the interface is a critical factor influencing the mechanical properties. Here, we applied transmission electron microscope (TEM) and geometrical phase analysis (GPA) to $Ti_5Si_3$/TiAl composites, and demonstrated that strain compatibility and geometric continuity of these two components primarily relied on interfacial shear deformation. This approach is expected to be applied in other traditional composites for nanoscale strain analysis and performance optimization.

***Keywords:*** Interfaces; Particulate reinforced composites; Precipitation; Strain field; Transmission electron microscopy (TEM).