

**Title:**

Spherical nanoindentation stress-strain curves of commercially pure titanium and Ti-6Al-4V

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**Abstract:**

Spherical nanoindentation combined with electron back-scattered diffraction was employed to characterize the grain-scale elastic and plastic anisotropy of single crystal alpha-Ti for commercially pure (CP-Ti) and alloyed (Ti-64) titanium. In addition, alpha-beta Ti (single colony) grains were characterized. The data set includes the nanoindentation force, displacement, and contact stiffness, the nanoindentation stress-strain analysis, and the alpha-Ti crystal orientations. Details of the samples and experimental protocols can be found in Weaver et al. (2016) *Acta Materialia* doi:10.1016/j.actamat.2016.06.053.