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A Novel Ultra-High Strength and Low-Cost As-Cast Titanium Alloy

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Abstract:

A novel low-cost titanium alloy (Ti-22Fe-4Si-4Cr) is reported, which has a very high compressive strength of 2.5 GPa and ultra high hardness of 710 Hv in as cast condition. The specific strength of the alloy is 488 kN.m/kg, one of the highest among all engineering materials.

Keywords: Low-cost titanium alloy, lightweight alloy, specific strength, in-situ composite, nano-eutectic

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