Phase Composition of Mechanically Alloyed Titanium and Iron Aluminides

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Aluminides belong in these days group of materials, which can be used as a good replacement of stainless steels, for whom they owe attractive mechanical properties, or nickel superalloys, which are too heavy. These materials are used in aerospace industry as well as in automotive industry. Good corrosion and oxidation resistance and high specific strength even up to high temperatures predict them to be also used for high temperature applications. In this paper, mechanical alloying was used. During mechanical alloying differences between TiAl and FeAl systems were seen. Iron aluminide formed single phased structure, whereas titanium aluminide formed preferentially two-phase structure.

Keywords: mechanical alloying, titanium aluminides, iron aluminides, phase composition

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References