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(57) Abstract :

Abstract Title: Al composites reinforced with high-strength metallic dispersoids and a method for producing the same. The present invention involves creation of a new class of aluminium metal matrix composites reinforced with tungsten based unique reinforcement i.e. W-20 at.% Ti or W-20Ti, which are successfully made without the formation of any intermetallic compounds through the hot-pressing technique. The relative densities of the composites attained are greater than 98% which is close to theoretical density, therefore exhibiting good mechanical strength. The bulk Al-composites with 2.8–5.3 vol.% of W-20Ti reinforcement, hot-pressed between 490 Deg.C to 525 Deg.C, demonstrate compressive yield strengths that are 30-100% higher than pure aluminium, based on pressing temperatures. Moreover, composites with 4 vol.% and 5.3 vol.% reinforcement offer a 20-25% higher in strength over Al-4 vol.% SiC. Figure 3

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