

고 에너지 볼 밀링과 SPS 성형에 의해 제조된 Al-Ti-B합금의 파괴인성에 미치는 Ti의 영향

Effect of Ti addition on the fracture toughness of Al-Ti-B alloys synthesized by high energy ball milling and spark plasma sintering

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The effects of Ti addition on microstructure and mechanical properties of  $(Al + Xat.\%Ti)2at.\%B$  ( $X=0.5, 1, 2$ ) fabricated by mechanical alloying and spark plasma sintering (SPS) were investigated. These alloys were prepared by high energy ball milling (attritor) and then fracture toughness was investigated by using a charpy impact tester. The SPS method was used to consolidate  $(Al + Xat.\%Ti)2at.\%B$  with the pressure of 50MPa. The powders were successfully consolidated to alloy which the theoretical density is 99%. It was confirmed that the fracture toughness of Al-Bat.% matrix composites was increased by the addition of Ti.