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Ti-10V-2Fe-3Al合金热压流变应力的研究

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HOT COMPRESSIVE FLOW STRESS STUDY OF Ti-10V-2Fe-3Al ALLOY

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摘要

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摘要 测试了Ti-10V-2Fe-3Al合金在β区850℃~950℃、ε=5×10⁻³~10s⁻¹~10s⁻¹条件下的压缩真应力-真应变曲线。研究了变形组织。结果表明:在850℃~950℃、ε=10⁻³~10s⁻¹~10s⁻¹范围内变形,动态回复是主要软化机制,其σ-ε曲线为动态回复型,变形后的组织为拉长晶粒。对所得的σ-ε曲线进行了数学分析,得出了流变应力模型。

关键词: 钛合金 流变应力 动态回复 应力指数

Abstract: The compressive true stress vs.true strain curves of Ti-10V-2Fe-3Al alloy have been measured in β phase region at 850℃~950℃×10⁻³~10s⁻¹~10s⁻¹.The results show that the soft mechanism is mainly dynamic recovery when the specimen is deformed in the range of T = 850℃~950℃ and e = 10⁻³~10s⁻¹~10s⁻¹, the σ-ε curves show the shape of the dynamic recovery and the deformed grain is lengthened. The mathematical model of flow stress has been proposed on the basis of mathematical analysis.

Keywords: titanium alloy flow stress dynamic recovery stress exponent.

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