

论文

SiC增强2024Al及6061Al合金复合材料的高温蠕变与循环蠕变行为

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摘要: 通过对SiCw / 6061Al与SiCp / 2024Al复合材料的蠕变及循环蠕变行为的对比研究发现, 虽然SiCw / 6061Al复合材料与SiCp / 2024Al复合材料相比有较高的蠕变抗力, 但其蠕变门槛应力却较低. 两种材料在298℃都显示循环蠕变减速行为, 但后者更明显. SiCw / 6061Al复合材料的稳态循环蠕变速率随卸载量增加首先降低然后升高, 而SiCp / 2024Al复合材料的稳态循环蠕变速率却随卸载量增加单调下降

关键词: SiC / Al合金复合材料 蠕变 循环蠕变

STATIC CREEP AND CYCLIC CREEP BEHAVIOUR OF SiC\_w/6061Al AND SiC\_p/2024Al COMPOSITES AT ELEVATED TEMPERATURE

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Abstract: The high temperature creep and cyclic creep behaviours of SiCw/6061Al and SiCp/2024Al composites were studied at 298℃. It was found that SiCw/6061Al composite showed better creep resistance but lower creep threshold stress as compared to SiCp/2024Al composite.Both composites showed cyclic creep retardation(CCR)in the tested stress region, while the CCR for SiCp/2024Al composite was more pronounced. For the SiCw/6061Alcomposite,the minimum cyclic creep rate decreased first and then increased with increasing the unloading amount, while for the SiCp/2024Al,the minimum cyclic creep rate decreased monotonically with increasing unloading amount.

Keywords: SiC/Al alloy composite creep cyclic creep

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