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空心叶片用石英基陶芯的反玻璃化规律

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DEVITRIFYING RULE OF SILICA-BASED CERAMIC CORE FOR HOLLOW BLADE

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摘要

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摘要 系统研究了石英基陶芯的反玻璃化影响因素和方石英析晶与陶芯性能的关系.实验结果表明:添加剂和烧结温度对反玻璃化有明显影响,前者能改变反玻璃化的起始温度,后者能加速反玻璃化的过程.随着方石英的析晶.陶芯的高温挠度明显减小,烧结强度和高温强度略有降低,线膨胀率增加.合理控制反玻璃化程度,就可制成优质石英基陶芯在空心叶片铸造中应用.

关键词:

Abstract: The basic influence of devitrification of silica-based ceramic core and the relation between cristobalite and core's properties have been investigated systematically in this article. Experimental results indicate, that additions and sintering temperature have evident effect on devitrification. The former can change devitrifying temperature, and the latter can accelerate devitrifying process. With cristobalite crystallized, high temperature deflection decreases; considerably sintering strength and high temperature strength decrease; and linear thermal expansion increases. Through controlling devitrification of core, it is possible to make a high-quality core which is used for the production of directionally solidified blade with complex cavities.

Keywords:

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