

Effects of pouring temperature and slurry viscosity on heat transfer and surface roughness in lost foam casting

Abstract

The effects of pouring temperature and slurry viscosity in terms of heat transfer on surface roughness during lost foam casting (LFC) of LM6 alloy were investigated experimentally. Heat transfer of molten materials is an important factors to changes the microstructure which is considered in the present study. It is primarily dependent on the pouring temperature, casting thickness, mould material, mould temperature and surrounding medium. The pouring temperature changed from 700 to 740°C and slurry viscosity altered from 20 to 36 sec. A full 2-level factorial design experimental technique was used to identify the significant factors that effect on surface roughness of castings. The results show that surface roughness improved by lower pouring temperature, whereas slurry viscosity has less influence on the quality of surface.