

Simulasi Numerik Pada Distribusi Temperatur Proses Pembekuan

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20305740&lokasi=lokal>

Abstrak

The directional solidification which is not toward to riser causes the shrinkage defect. This defect can be predicted by investigating the temperature distribution in riser or casting products. The goal of this research is to examine the temperature distribution using Finite Element Software (ANSYS) and then an ad hoc experiment has been performed to verify the result of the simulation, especially the existences of shrinkage

The simulation is carried out by sand casting process using pure aluminum. This research uses enthalpy method to examine the distribution of temperature. The properties of melted metal that being used for the simulation are enthalpy $H(T)$ and thermal conductivity $k(T)$. For experiment, the sand casting process uses pure aluminum and eutectic aluminum. The eutectic aluminum castings is used to support the pure aluminum castings.

The result of the simulation hypothesis against shrinkage defect is appropriate with the experiment result.