

研究室名	頃安研究室 論文発表
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題名	アルミニウム合金溶湯とフラン自硬性積層造形鑄型の接触状態によって変化する熱伝達係数の推定
掲載雑誌	Journal of Japan Foundry Engineering Society, Vol.95, pp.183-190, (2023) DOI : doi.org/10.11279/jfes.95.183
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概要	The heat transfer coefficient (HTC) between molten alloy and mold is essential for conducting filling and solidification analysis of the casting process. The objective of this study is to obtain and compare the HTC under different contact conditions using the temperature histories of a cylindrical furan sand mold and aluminum alloy, JIS AC4CH (A356). The finite difference method was used to estimate the temperature differences between the alloy and mold. As a result, differences in the HTC were confirmed between the bottom and side directions of the mold. Furthermore, it was found that the HTC changed during solidification from liquidus temperature to the completion of eutectic solidification. This demonstrates that the HTC depends on the contacting pressure between the solidifying layer and mold.