

عنوان مقاله:

A TRANSIENT TWO-DIMENSIONAL INVERSE ESTIMATION OF THE METAL-MOLD HEAT TRANSFER COEFFICIENT DURING SQUEEZE
CASTING of AL-۴.۵WT%CU

محل انتشار:

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نویسنده:

خلاصه مقاله:

In this paper, a transient, two-dimensional and nonlinear inverse heat conduction problem in solidification process is considered. Genetic algorithm is applied for the identification of the interfacial heat transfer coefficients during squeeze casting of commercial aluminum alloy (Al-۴.۵wt%Cu) by assuming a priori information regarding the functional form of the unknown heat transfer coefficients found in open literature. In this work, simulated (noisy and filtered) temperatures are used instead of experimental data. The estimated temperatures are obtained from the direct numerical solution of a two-dimensional conductive model. A modified elitist genetic algorithm is used to minimize the least square objective function containing estimated and simulated temperatures. The accuracy of the proposed method is assessed by comparing the estimated with the pre-selected parameters.

کلمات کلیدی:

Inverse Heat Conduction Problem, parameter estimation, Genetic Algorithm, Interfacial Heat Transfer Coefficients, Data Filtering

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