

Research and Development of Intelligent Cooling Channels Design System

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Abstract : The cooling channels of injection mould play a crucial role in determining the productivity of moulding process and the product quality. It's not a simple task to design high quality cooling channels. In this paper, an intelligent cooling channels design system including automatic layout of cooling channels, interference checking and assembly of accessories is studied. Automatic layout of cooling channels using genetic algorithm is analyzed. Through integrating experience criteria of designing cooling channels, considering the factors such as the mould temperature and interference checking, the automatic layout of cooling channels is implemented. The method of checking interference based on distance constraint algorithm and the function of automatic and continuous assembly of accessories are developed and integrated into the system. Case studies demonstrate the feasibility and practicality of the intelligent design system.

Keywords : injection mould, cooling channel, intelligent design, automatic layout, interference checking

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