

## RESEARCH PAPERS

利用神经网络预测注塑成型过程熔融温度

王保国, 高福荣, 余宝乐

Department of Chemical Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China

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**摘要** Among the processing conditions of injection molding, temperature of the melt entering the mold plays a significant role in determining the quality of molded parts. In our previous research, a neural network was developed to predict the melt temperature in the barrel during the plastication phase. In this paper, a neural network is proposed to predict the melt temperature at the nozzle exit during the injection phase. A typical two layer neural network with back propagation learning rules is used to model the relationship between input and output in the injection phase. The preliminary results show that the network works well and may be used for on-line optimization and control of injection molding processes.

**关键词** [injection molding](#) [neural network](#) [melt temperature](#)

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### Neural Network Approach to Predict Melt Temperature in Injection Molding Processes

WANG Baoguo, GAO Furong, YUE Polock

Department of Chemical Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China

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**Abstract** Among the processing conditions of injection molding, temperature of the melt entering the mold plays a significant role in determining the quality of molded parts. In our previous research, a neural network was developed to predict the melt temperature in the barrel during the plastication phase. In this paper, a neural network is proposed to predict the melt temperature at the nozzle exit during the injection phase. A typical two layer neural network with back propagation learning rules is used to model the relationship between input and output in the injection phase. The preliminary results show that the network works well and may be used for on-line optimization and control of injection molding processes.

**Key words** [injection molding](#); [neural network](#); [melt temperature](#)

通讯作者:

王保国 [bgwang@public.tpt.tj.cn](mailto:bgwang@public.tpt.tj.cn)

作者个人主页: 王保国; 高福荣; 余宝乐

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