■ 论文摘要

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# 基于Archard理论的挤压次数对模具磨损量的影响分析

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摘　要：针对前次挤压对后次挤压的模具磨损有着显著影响，模具的总磨损量并不与单次磨损量呈简单的线性关系，将考虑温度影响的Archard磨损计算修正模型与有限元数值模拟分析方法相结合，预测铝合金挤压过程中模具表面磨损最严重的部位，建立该部位磨损量与挤压次数之间的确切关系，并由此提出一种考虑挤压次数影响的总磨损量计算公式。

关键字：挤压；模具磨损；Archard理论；有限元

# Analysis of influence of extrusion times on total die wear based on Archard theory

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**Abstract:** Based on the fact that under discontinuous extrusion condition, former passes often have great effect on the next ones, so that the relationship between die wear of single process and total wear is not linear, the position with the largest amount of wear on the die surface was predicted, and the relationship between the extrusion times and the total die wear was estimated by combining modified Archard model which considered the influence of temperature on the die wear behaviors and finite element method (FEM) technology. As a result, an equation for evaluating the total die wear which considers the effects of extrusion times was established.

**Key words:** extrusion; die wear; Archard theory; finite element method (FEM)