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计算机集成制造系统 » 2015, Vol. 21 » Issue (第2期): 477-484 DOI: 10.13196/j.cims.2015.02.021

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大规模定制环境下基于零件复杂度模型的工时估算

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Labor hour estimation in mass customization based on part complexity model

[摘要](#)[图/表](#)[参考文献](#)[相关文章 \(15\)](#)全文: [HTML](#) (1 KB)输出: [BibTeX](#) | [EndNote](#) (RIS)

摘要 针对大规模定制环境下产品种类多、工时制定困难的特点,为了能够快速且准确地获取产品工时,研究了零件复杂度与工时之间的关系,提出一种基于零件复杂度的工时估算方法。通过对零件进行分析,找出影响零件加工时间的关键因素,从零件拓扑关系和工艺属性着手,根据零件拓扑关系相似性原理与三维结构模型,分别构建零件拓扑结构复杂度和零件工艺属性复杂度计算模型;根据编码搜索原则和数据库中的工时信息,运用MATLAB软件编程确定零件复杂度和工时之间的函数关系,从而快速准确地计算出新零件的加工时间。最后通过应用实例验证了该方法的有效性。

关键词 : 零件复杂度模型, 零件拓扑结构, 大规模定制, 工时估算

Abstract : According to many kinds of product, it was difficult to get labor time in mass customization environment, the relationship between complexity of new part structure and labor time was researched to obtain the labor hour quickly and accurately, and a labor time estimation method was proposed based on the part complexity. Through analyzing the parts, the key factors affecting part processing time were found out. According to the part topological relations similarity principle and three-dimensional structural model, the computational models of part topology complexity and part process complexity were constructed respectively. Based on the code search principle and the labor time information in database, the functional relation between part complexity and labor hour was confirmed by programming with MATLAB software, which could calculate the processing time of new part quickly and accurately. The proposed method was verified to be feasible by an example.

Key words : part complexity model part topology mass customization labor time estimation

ZTFLH: TH16

基金资助: 国家自然科学基金资助项目(71271224)。

引用本文:

陈友玲, 王尧, 谢淑红. 大规模定制环境下基于零件复杂度模型的工时估算[J]. 计算机集成制造系统, 2015, 21(第2期): 477-484.

链接本文:

<http://www.cims-journal.cn/CN/10.13196/j.cims.2015.02.021> 或 <http://www.cims-journal.cn/CN/Y2015/V21/I2第2期/477>

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