

信息技术

基于遗传算法的锻压机床多目标优化设计方法

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摘要:

提出了一种基于遗传算法的锻压机床优化设计方法,并基于该方法开发了一个以多目标参数优化系统为核心的优化设计平台。该设计平台综合运用了Pro/E的建模及分析计算能力和MATLAB的数学分析处理能力,使得在该优化平台上进行的优化设计既可以保证以精确的实体模型的分析结果为指导,又能基于遗传算法进行多参数多目标协同优化,从而提高了锻压机床的设计效率和优化效果。以某锻压机床为实例,验证了该平台的有效性和可靠性。

关键词:

锻压机床;优化设计平台;遗传算法;多目标优化

A Multi-objective Optimization Method for Forging Machine Based on Genetic Algorithm

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Abstract:

This paper proposed a genetic algorithm-based design and optimization method for forging machines,and based on this method developed an integrated platform whose core was a multi-objective optimization system.It can direct the design,expedite the optimization and improve the optimization result by calculating the precise analysis results of 3D models and carrying through multi-objective optimization based on genetic algorithm.Finally,the reliability and validity of the platform was validated by optimizing a forging machine.

Keywords: forging machine;integrated design and optimization platform;genetic algorithm;multi-objective optimizationzz')" href="#"> forging machine;integrated design and optimization platform;genetic algorithm;multi-objective optimization

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