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Multi-objective Optimization Strategies

Fused Deposition Modeling pp 33-49 | Cite as

Chapter
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Abstract

In this chapter, multi-objective optimization as a strategy for quality production of parts through fused deposition modelling is presented. Various techniques used in undertaking the multi-objective optimization process are described based on case studies from the literature and the authors' data. The general algorithms for multi-objective optimization of the FDM process are described. The most significant objectives of the various optimization cases are identified and described in relation to the quality of the fused deposition modelling of parts. The main objectives for optimizing fused deposition process are (i) to increase the rate of production, (ii) to reduce material wastage and utilize as minimum material as possible, (iii) save on the cost of power consumption during printing and (iv) achieve the highest quality of FDM parts.

Keywords

3D printing Fused deposition modelling Genetic algorithms Grey relational degree Multi-objective optimization Pareto Printing parameters

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