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Improving Fused Deposition Modeling Efficiency: A Parameter Optimization Approach

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Abstract : Fused deposition modeling (FDM) is a fast-growing rapid prototyping (RP) technology due to its ability to build functional parts having complex geometrical shapes in a reasonable time period. The quality of built parts depends on many process variables. In this study, four important process parameters such as layer thickness, model interior fill style, support fill style and orientation are considered. Their influence on three responses, such as build time, model material, and support material, is studied. Experiments are conducted based on factorial design, and the results are presented.

Keywords : fused deposition modeling, factorial design, optimization, 3D printing
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