

**Effect of process parameters on the impact strength of fused filament fabricated
(FFF) PLA parts**

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ABSTRACT

Fused Filament Fabrication (FFF), a well-known additive manufacturing (AM) process has been widely used in developing prototypes as well as functional parts for various sorts of industrial applications because of its ability for creating parts with sophisticated design in the stipulated time along with less wastage of material. Selecting input process parameters in FFF is a tedious task as they directly affect the performance. In this experimental investigation, efforts have been made to select the best parameter setting as per the impact strength perspective. Three important process parameters such as layer thickness, build orientation, and infill density have been considered to study their effects on the impact strength of FFF-printed polylactic acid (PLA) test specimen, using design of experiment (DOE). All the test specimens for impact strength were made according to ASTM D256 standard.

Keywords: Fused Filament Fabrication (FFF); Design on experiment (DOE); Polylactic acid (PLA)

