Abstract

Fused Deposition modelling (FDM) technology is based on decomposition of 3-D computer models into thin cross sectional layers, followed by physically forming the layer and stacking them up layer by layer. FDM provide freedom to add material in the desired area and we are also able to create hollow region in certain portion of layer. In this way low weight with good strength single ply raw material with hollow cross section is produced. Void spaces were
created in single ply raw material. FEM analysis was applied to select the material. Results of FEM analysis shows that ABS material is better compressive as comparison to Nylon101, Nylon6/10. So ABS material is selected for manufacturing of specimens. ABS specimens were manufactured with the help of FDM. Compressive test of specimens at 8000N shows that two small square structures give optimum results for ABS material

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**Index Terms**

Computer Science  
Circuits And Systems

**Keywords**

Stl - Standard Triangulation Language  
Fem - Finite Element Method  
Abs - acrylonitrile  
Butadiene Styrene  
Fdm - Fused Deposition  
Modelling