

3D CAD MODEL PHYSICAL ANALYSIS USING ADDITIVE MANUFACTURING PROCESS

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Abstract: The purposes of this paper are evaluated the 3D physical quality models commencing of 3D Scanning and 3D CAD model using Additive Manufacturing of Fused Deposition Modeling (FDM) technique. The analysis is to determine their geometry errors. The physical evaluation model from 3D Scanning image processing and CAD model were compared. The analysis on the surface roughness and surface morphology of both models were carried out. The results from the analysis show that the quality model of the surface roughness and surface morphology of 3D Scanning model consist of less inclusion, irregular layers but rougher surface with uniform tessellation geometry. However the CAD model consists of inclusion but with consistent layer with smoother staircase surface geometry.

These analysis findings show that the utilisation of Additive Manufacturing approach to engineering science which is expected can be produced quality of manufacturing components in the future.