Title:

Evaluation of mechanical properties of 3D printed PETG and Polyamide (6) polymers

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Abstract:

The present study endeavors to undertake an exhaustive assessment of the mechanical properties of PETG and Polyamide (6) polymers, fabricated via Material Extrusion (MEX) in 3D printing. The objective of the investigation is to examine the mechanical properties of test samples by varying printing parameters such as nozzle temperature, bed temperature, printing speed, layer height, and infill density. The purpose is to comprehensively evaluate the impact of these printing parameters on mechanical properties. PETG demonstrated superior strength characteristics at a nozzle temperature of 250 °C, bed temperature of 80 °C, infill density of 90%, a printing speed of 40 mm/s, and a layer height of 0.2 mm. Polyamide (6) exhibited greater strength at a nozzle temperature of 260 °C, bed temperature of 90 °C, infill density of 90%, a printing speed of 40 mm/s, and a layer height of 0.2 mm. The outcomes of this study provide significant insights into the mechanical properties of PETG and Polyamide (6) produced via MEX. These insights could be utilized to optimize printing parameters for specific applications

Biography:

Mr. Lakshman Sri is a dynamic Aeronautical Engineering Student with a diverse skill set that showcases his competence and proficiency. His impressive technical skills include expertise in Catia & Solidworks,Ansys Fluent,Creo Illustrate, Python, and MATLAB.His areas of expertise include Composite Manufacturing, Additive Manufacturing, Mechanical Testing, and Analysis.

Lakshman's track record of receiving numerous awards for his excellence underscores his dedication and capability. He actively engages in research and co-curricular activities, having authored and presented research works at National and International Conferences.