

## **DMA analysis of 3D prints**

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The main goal of the work is to analyze the viscoelastic properties of parts manufactured by using the fused filament fabrication (FFF) technology. This technology is currently among the most widespread 3D printing technologies in various areas of industry. Experiments were performed for samples from PET-G and PLA materials using a Dynamic mechanical analyzer, which is intended to perform the dynamic mechanical analysis (DMA) and the dynamic response of fused filament fabrication specimens. These specimens are studied while they are subjected to dual cantilever loading under periodic stress. The samples were printed in different filling density and shape from 50 to 100 % and layer thickness of 0.1 and 0.2 mm. DMA is performed with temperature ranging from room temperature to 100 °C at a frequency of 10 Hz. The effect of process parameters of fused filament fabrication on the viscoelastic properties of 3D printed PETG specimens is explored in the form of glass transition temperature, storage modulus and loss modulus.

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