

## عنوان مقاله:

Effect of 3D printing process parameters on mechanical properties of PLA specimens

## محل انتشار:

ششمین کنفرانس بین المللی کامپوزیت، مشخصه سازی، ساخت و کاربرد (سال: 1397)

تعداد صفحات اصل مقاله: 2

## نویسندگان:

M Heidari-Rarani - Assistant Professor, Department of Mechanical Engineering, Faculty of Engineering, University of Isfahan, Isfahan, Iran

P SADEGHI - Bachelor Student, Department of Mechanical Engineering, Faculty of Engineering, University of Isfahan, Isfahan, Iran

E EZATI - Bachelor Student, Department of Mechanical Engineering, Faculty of Engineering, University of Isfahan, Isfahan, Iran

## خلاصه مقاله:

Fused deposition modelling (FDM) is a rapidly growing additive manufacturing technology due to its ability to build functional parts have complex geometries. The mechanical properties of fabricated specimens depend on 3D printing process parameters. In this study, the effect of infill density and printing speed are experimentally investigated on the tensile properties of PLA specimens. To this end, a dog-bone tensile specimen with dimensions selected from ASTM D638 standard is modelled in Catia software and a STL file is generated. Then, this file is converted to G-codes using Cura software. FDM 3D printer prints the specimen from these G-codes. Specimens with three infill densities, i.e., 20%, 40% and 60% with constant printing speed 40 mm/s are printed and tested under quasi-static tensile test. Results show that infill density has significant effect on the modulus of elasticity, maximum strength and failure strain

## کلمات کلیدی:

3D printing, Fused deposition modeling (FDM), PLA, Mechanical properties

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/901532>

