Abstract

This project Evolves around increasing the efficiency and accuracy of certain homemade 3D printers (DIY) and those 3D printers available in the local market. (Market available printers) .using open source information available to obtain the needed data
The main goal of this project is to provide simple guidelines to operate a 3d printer, using the hardware and the related software to enhance 3d printing operation using different types of .filaments with different printing shapes arrangements
Another goal also is to give helping hands by reaching out to local businesses to enable them to manufacture discrete products which are difficult to achieve using traditional .manufacturing approaches at reasonable costs to accommodate high quality products
This work's first and foremost priority is to optimize certain 3D printing parameters such as Nozzle size, Filament size, Filament size, Filament (thermoplastics) polymer material melting temperature, Bed temperature, Printing speed, Printed layer thickness, Infill geometry and .Infill density
This project is expected to enhance 3D printing operation applications in local markets to meet the increasing demands on products of relatively small quantities and discrete items production. 3D printing goes in many fields of life such as engineering, medical, architecture, .automotive, fashion and education
In this part of the world, 3D printers are hard to come up with or to buy due to their high prices and the tedious process of importing such machines here in Palestine. In this project, we try to reduce the errors and artifacts in homemade 3D printers at low costs. The machine will work with different types of thermoplastics; it will deal with many types of plastics depending on their chemical properties by controlling the heating and cooling timings to get .the best results