

# Comparative Study Between TPU Flexible and Soft Epoxy Resin Materials on Development of Heart Model for CardioVASS Device

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## Abstract

Medical industries witnessed many developments in the heart model. However, there are a limited number of heart models that can be applied in the medical training process. Besides, the sources of the materials are expensive and hard to obtain. Concerns with the problems, researchers and scientists tried to formulate a new heart model that suitable for medical training. The objectives of this research are to make a comparative study of the TPU flexible material between the soft epoxy resins for the fabrication of the heart model focuses on *the CardioVASS* device. The method of fabrication involved 3D printing and saturation process of the viscous resin. The materials were tested with the tensile test to gain the stress–strain curves and the load–displacement graph. The TPU flex provides higher strength, durability, and elasticity than the soft epoxy resin material. From the results, it can be concluded that the TPU flex material was a better choice of material for the fabrication of the heart model for the *CardioVASS* device.

## Keywords

TPU flexible Epoxy resin Heart model *CardioVASS* device 3D printer  
Cardiovascular Filament

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## Notes

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