

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN AND FABRICATE  
3D HANDPHONE CASING**

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## **ABSTRACT**

People nowadays are enamoured with their smartphones, which leads them to carry it with them everywhere they go, 24 hours a day, seven days a week. Smartphones, on the other hand, are constantly exposed to a variety of conditions that might impair or shorten their life. Smartphones constructed of glass are susceptible to damage. As a result, a phone case must be designed to address the issue. However, not all smartphones' cases are sold in stores, and consumers do not have access to the manufacturing process. Thus, the objective for this project is to fabricate a handphone casing using a 3D printer. This method may solve the problem of finding a perfect phone case as it is available to all consumers while the conventional method which is the injection moulding is only available to certain manufacturers. The fabrication will utilise a CAD software which is SolidWorks in designing the casing, a slicing software from Ultimaker which is CURA to slice the CAD into "gcode" file and lastly a 3D printer from CREALITY which is Ender 3 for the printing process. The material used in this project is TPU 95A as it is the most suitable material for a handphone case in which it is flexible, soft to the touch, and high wear and tear resistance. Our results from the fabrication process shows that the handphone casing can be manufactured using a method other than injection moulding. To conclude, a multiple test of trial and error in printing are required to obtain the perfect 3D printed product.

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