



De La Salle University - Dasmariñas

**DEVELOPMENT OF A VOLUME REDUCING MACHINE FOR  
POLYETHYLENE TEREPHTHALATE (PET) BOTTLES**

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## ABSTRACT

This study helps to decrease garbage consumed by the University which has a great impact on environment preservation. Therefore, this study is to conduct research and consultation which will be used in designing, fabricating and testing of Volume Reducing Machine for Polyethylene Terephthalate (PET) bottles through shredding and melting processes and the output will be converted into useful products. Used PET plastic bottles will be cleaned and will be fed into the shredding machine and then followed by melting process and extrusion. The researchers did an experiment on the quality of melted plastics when exposed to different temperatures measured in the extruder using a thermostat. The researchers used the temperatures 95 ° C, 90 ° C and 80 ° C. It was found out that the extruder produced better quality when exposed to 80 ° C. So, the shredded plastic bottles will be heated by band heaters at a temperature of 80 ° C for the production of good quality of melted plastic. In the first trial, the researchers fed 50g of shredded plastic to the extruder. The weight was reduced into 40g after the extrusion. In the second trial, the researchers fed 100g of shredded plastics and it was reduced into weight of 80. So, a weight of 100g can be fed into the extruder in order to attain its maximum capacity of the melting machine. On the basis of the results of this research, it is concluded that a prototype machine is made which can reduce the volume of used PET bottles



and converting it into useful raw materials for production of plastic granules, plastic decorative furniture and plastic mixed concrete.





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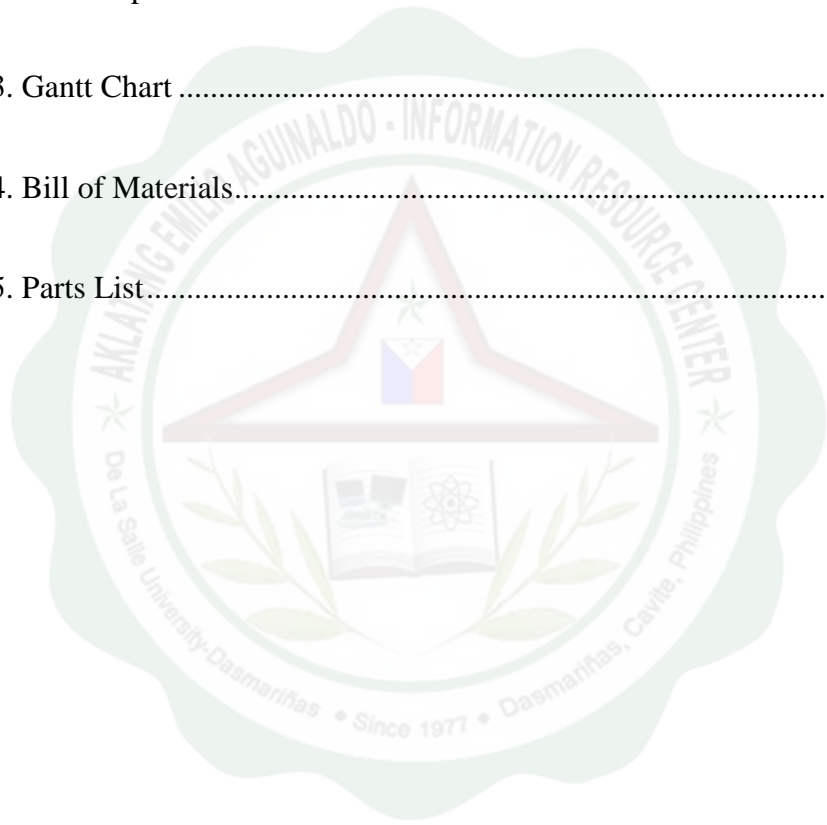


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