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# **FACULTY OF ENGINEERING**

## **DEPARTMENT OF MINING AND WATER RESOURCES ENGINEERING.**

### **PROJECT TITLE:**

**DESIGN AND FABRICATION OF A SOLAR AND AC  
POWERED PLASTIC BOTTLE SHREDDING MACHINE.**

**BY**

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**Presented in partial fulfillment for the award of a Bachelor's Degree in Water  
Resources Engineering.**

## **ABSTRACT**

Plastic recycling is one the steps taken to manage and curb the plastic solid wastes and the impacts of this waste on the environment. The process of plastic recycling involves collection, sorting, washing, and shredding of the plastics by a shredding machine before compounding the plastics. Much as this is an effective intervention, it is under developed in developing countries like Uganda and most especially in the cities like Kampala where there is most plastic waste generation. This is mainly due to the high costs involved with the shredding technologies in place and the low profitability of the ventures to those involved in collection and sorting of the plastic waste.

This paper hence focused on the design and fabrication of a portable solar and AC powered plastic bottle shredding machine that is cheaper and more economically viable than the existing shedding technologies.

The quantity and quality of waste generated in Kampala is outlined and the process of plastic recycling is discussed in detail.

The methodology used to come up with the machine is addressed and the results of the performance of the machine are listed and discussed together with the economic analysis.

## **ACKNOWLEDGEMENT**

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My project supervisor Mr. Maseruka Benedicto for the knowledge, guidance, encouragement and skills given to me during the research.

And finally, to my family and friends for being very supportive.

## **DEDICATION**

This report is dedicated to my family and all the innovative engineers out there.

I also dedicate it to the researchers who in the line of waste management and renewable energy.

## **DECLARATION**

I **OKELLO ALFRED** declare to the best of my knowledge that the information in this report is as a result of my own efforts and has not been submitted to any university or institution of higher learning for the award of a bachelor of science in Water Resources Engineering

Registration number; **BU/UP/2016/603**

Signature .....

Date.....

## **APPROVAL**

I OKELLO ALFRED submit this final year project report to the Faculty of Engineering for examination with approval of my supervisor.

MR. MASERUKA BENDICTO

Signature.....

Date: .....

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