FACULTY OF ENGINEERING

DEPARTMENT OF WATER RESOURCES AND MINING ENGINEERING

FINAL YEAR PROJECT

DESIGN AND CONSTRUCTION OF AUTOMATED SOLAR PANEL CLEANING SYSTEM FOR REMOVAL OF DUST

By

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A final year project proposal report submitted to the Department of Water Resources and Mining Engineering as a partial fulfillment of the requirements for the award of a Bachelor of Science in Water Resources Engineering

ABSTRACT

Energy is one of the major issues that the world is facing today, the supply of energy has been one of the major problems for both urban and rural households. About 60% to 70% of the energy demand of the most countries in the world are met by fuelwood and agriculture residues.

Solar energy is a renewable source of energy, which has a great potential and it is radiated by the sun. Renewable energy is important to replace the using of electric energy generated by petroleum. Solar power has become a source of renewable energy and solar energy application should be enhanced. The solar PV modules are generally employed in dusty environments which are arid, semi-arid or dry. The dust gets accumulated on the front surface of the module and blocks the incident light from the sun. It reduces the power generation capacity of the module. The power output reduces as much as by 50% if the module is not cleaned for a month. The cleaning system has been designed cleans the module by controlling the Arduino programming. To remove the dust in the PV modules to improving the power efficiency.

DECLARATION

I MAISABA FRANCIS, hereby declare that this project is completely based on my research work except for citations and quotations which have been specifically acknowledged. It has not been submitted to any other examining body or academic institution for any academic award.

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APPROVAL

This piece of work has been endorsed by: -

……..

Mr. THOMAS MAKUMBI

Date: ……..

DEDICATION

This piece of work is dedicated to all those who have supported me on my journey during its compilation especially my parents who have worked sacrificially and tireless to ensure that I attain education. To my brothers and sisters, all my classmates and any other person who prayed for me.

ACKNOWLEDGEMENT

I would like to extend my sincere gratitude to the Almighty God for His unlimited grace and love bestowed upon my life.

To my parents, great thanks for the continued contribution throughout the journey of this project, may the almighty God reward you.

In a special way, I would like also to thank my supervisor as well any other lecturer who supported me with advice, guidance and encouragement throughout the study.

Lastly, I would also like to express my appreciation to my friends and colleagues for the moral, care, encouragements and physical support given to me during the course of compilation of this proposal report.

May the Almighty God bless you abundantly.

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LIST OF ACROYNMS

MW-Megawatts

kw -kilowatt

N – Newtons

N.m – Newton meter

MEMD- Ministry of Energy and Mineral Development

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