



**BUSITEMA
UNIVERSITY**
Pursuing excellence

FACULTY OF ENGINEERING

**DEPARTMENT OF ELECTRICAL AND ELECTRONIC
ENGINEERING**

FINAL YEAR PROJECT

**ELECTRICITY GENERATION FROM MUNICIPAL SOLID WASTE
USING HEATING PANNELS AND HEATING SENSOR
TECHNOLOGY.**

By;

NAKANWAGI SANDRA

BU/UP/2020/1230

Nakanwagisandra56@gmail.com

SUPERVISSORS:

MR. MUGWANYA PATRICK

MR. ANDREW RWENDEIRWE

**This Final Year Project Report submitted to the Department of Electrical
and Electronics Engineering in a partial fulfilment of the requirement for
the award of the degree of Bachelor of Science in Electrical Engineering of
Busitema University.**

JUNE 2024

DECLARATION

I Nakaknwagi Sandra (BU/UP/2020/1230) hereby declare to the best of my knowledge, that this project report is an outcome of my original work and that it has not been presented to any institution of learning for an academic award.

Name: NAKANWAGI SANDRA

Signature: .......

DATE: 04 / 08 / 2024

APPROVAL

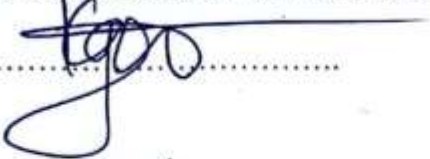
This final Year Project Report has been done under our supervision and submitted to the faculty of engineering for examination with our approval.

MAIN SUPERVISOR: MR. MUGWANYA PATRICK

Signature:

DATE:/...../.....

CO-SUPERVISOR: MR. ANDREW RWENDEIRWE

Signature:


DATE: ..18..11..2024


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LIST OF ACRONYMS

IncCond.....	Incremental Conductance
LCD.....	Liquid Crystal Display.
MPPT.....	maximum power point tracking
P&O.....	perturb and observe

SCC.....	Solar charge controller
SDM.....	single diode model

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ABSTRACT

This proposal presents a maximum power point tracking (MPPT) solar charge controller with automatic DC load management to continuously track and operate the system at maximum power from a solar panel using a DC-DC buck converter, sensors for voltage and current and a microcontroller. The automatic DC load control will involve selectively controlling the categorised loads depending on the system voltage.

The MPPT algorithm shall be implemented using an Arduino Nano with the Perturb and Observe technique. To validate this proposed system, both simulation and hardware implementation will be carried out by the MATLAB/SIMULINK and Proteus environments.

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