BUSITEMA UNIVERSITY
Pursuing Excellence
FACULTY OF ENGINERING

P.O. Box 236, Tororo, Uganda
Gen: +256 - 45 444 8838
Fax: +256 - 45 4436517
Email: info@adm.busitema.ac.ug
www.busitema.ac.ug

DEPARTMENT OF WATER RESOURCES ENGINEERING MINING ENGINEERING

A SMART HYDRO-INFORMATICS SYSTEM FOR REALTIME MONITORING OF SOLAR POWERED SURFACE WATER PUMPS.

BY

AUMA NELVINE AND IGUNE YOKOLAM

UNDER SUPERVISION OF MR. MASERUKA BENEDICTO

ABSTRACT

Surface water pumping is carried out worldwide. It is carried out to move water from areas of low altitudes to areas of high altitude for domestic uses and irrigation purposes.

After a short period of time, many pumps get damaged before reaching their design period due to lack of real time monitoring systems for both water quality and hydraulic water parameters. This leaves us with high operational, maintenance and treatment costs.

This design focused on addressing the major problems encountered due to uncontrolled pump failures this has resulted from negligence of water parameter monitoring

The system achieves its functionality through use of various sensors to automatically respond to these parameters by turning off and on of the pump

DECLARATION.

I IGUNE YOKOLAM, AUMA NELVINE do hereby declare that this project proposal is my original work and has never been published for any other degree award to any other university or institution of higher learning.

SIGN: …….

DATE: …….

SIGN: …….

DATE: …….

APPROVAL

This final year project report for the design and construction of a smart hydro-informatics system for real-time monitoring of solar powered surface water pumps has been prepared under the supervision of;

Project Supervisor

Mr. Maseruka Bendicto

Signature ……...……

Date……...

ACKNOWLEDGEMENT

I thank the Almighty God for the far that He has brought me, the gift of life and protection he has rendered throughout the writing of this final year project.

I extend my deep sense of gratitude and indebtedness to my academic supervisor Mr. Maseruka Benedicto, for his kind attitude, keen interest, immense help, inspiration and encouragement which helped me throughout this final year project. My heart pulsates with the thrill for tendering gratitude to the entire staff of the Department of Mining and Water Resources Engineering Busitema University for providing any form of assistance throughout this final year project.

Lastly, I thank all those who were involved directly or indirectly during my final year project writing.

May the good Lord reward you all!

List of abbreviations

LCD: LIQUID CRYSTAL DISPLAY

GSM: GLOBAL SYSTEM FOR MOBILE COMMUNICATION

MODEM: MODULATOR DEMODULATOR

DC: DIRECT CURRENT

NPSH: NET POSTIVE SUNCTION HEAD

SMS: SHORT MESSAGE SERVICE

HTML: HYPER TEXT MARK UP LANGUAGE

AJAX: ASYNCHRONOUS JAVA SCRIPT AND XML

PHP: HYPERTEXT PREPROCESSOR

CSS: CASCADING STYLE SHEETS

List of figures

Table of contents