ENERGY HARVESTING AT A 110-KV-CABLE FOR INDEPENDENT MONITORING PURPOSES

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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High Voltage cables are essential in the world of technology. They provide necessary power to houses for supplying energy from everyday devices such as smartphones and washing machines to big industrial parts such as manufacturing machines. However, this high voltage cables sometimes are not maintained properly due to the lack of resources and man-power to repair them. In order to combat this problem, IoT and digital twin technology are starting to emerge as a new innovative solution to become a monitoring station in this area of work. By applying this IoT and digital twin technology it can help manufactures or power companies to monitor their high voltage cables from a distance. Nevertheless, by applying energy harvesting methods that are able to self-power sensors for the digital twin technology it can last for a lifetime. Therefore, the combination of this elements will result in a system that can power itself and monitor the high voltage cable at the same time.

Keyword: Internet of Things, Digital Twin, Energy Harvesting, Microcontroller Board, Mosquitto MQTT, and Node-Red

DEDICATION

I dedicate this work to my family, friends, colleagues, and my lecturers.

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