A Major-Project report on

"Reduction Of Harmonics Using Pq Based Hysteresis Controlled Active Filter"

Submitted to

Jawaharlal Nehru Technological University, Hyderabad

In partial fulfilment of the academic requirements for

the award of Degree of

BACHELOR OF TECHNOLOGY

In

ELECTRICAL & ELECTRONICS ENGINEERING

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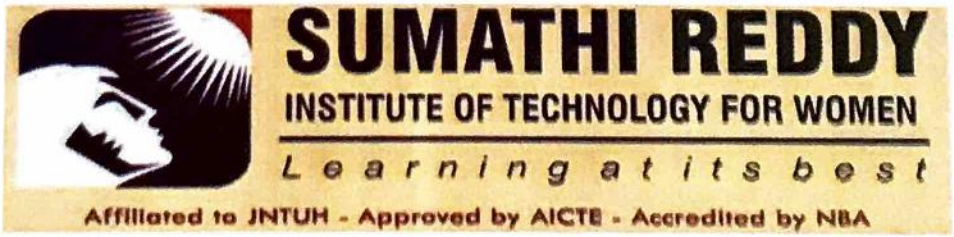

2022-23

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CERTIFICATE

This is to certify that the major project entitled **"Reduction Of Harmonics Using Pq Based Hysteresis Controlled Active Filter"** submitted to **JNTUH** carried out by the following students of **IV-B.Tech** in the partial fulfillment for the award of the B.Tech Degree in **Electrical &Electronics Engineering** during the academic year 2022-23.

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ABSTRACT

A three-phase inverter-based Active Filter (AF) controlled by Instantaneous real and reactive power theory (PQ theory) based hysteresis and PI controllers are present. An Inverter based AF is used to reduce the harmonics caused by non-linear loads in the source voltage and current by injecting the compensating currents. The hysteresis Controller generates the gate pulses required for the operation of AF.

Instantaneous real and reactive power theory (PQ theory) monitors the active and reactive powers and generates the reference current accordingly. PI controller regulates the voltage of the DC link capacitor. The MATLAB Simulink model has been designed for the proposed approach and the THD is reduced significantly.

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