

**QUANTUM-INSPIRED ARTIFICIAL IMMUNE SYSTEM (QIAIS)  
FOR OPTIMAL LOAD SHEDDING TECHNIQUE FOR LOSS  
MINIMIZATION**

**This is presented in partial fulfillment for the award of the  
Bachelor of Engineering (HONS) Electrical Engineering (Power)**

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**JULY 2013**

## **ACKNOWLEDGEMENT**

In the name of Allah S.W.T the Most Gracious and Most Merciful, thanks for giving me ideas and strength throughout the completion of this project. Peace upon our Prophet Muhammad S.A.W who has brought light to mankind.

This research project would not have been possible without the support of many people. I would like to express my gratitude to my beloved supervisor Miss Norlee Husnafa for the useful comments and remarks through the learning process of this thesis. She inspired me greatly to work in this task. I also would like to thank her for showing me some example that related to the topic of my thesis.

In addition, I would also thankful to my dear parents and friends who helped me a lot in finalizing this thesis within the limited time frame, and for their understanding, constant encouragement and supports on me in completing this thesis.

Thank you.

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## ABSTRACT

In power system restructuring, losses occur in generation and transmission may caused high cost to consumers. So that the optimum load shedding techniques are developed in order to reduce the losses thus minimize the consumer's costs. In order to solve this problem, a several techniques had been developed to optimum the load shedding. Besides that, Quantum-Inspired Artificial Immune System optimization technique is an approach for optimal load shedding in distribution system. QIAIS is a combination of Artificial Immune System and the Quantum Inspired techniques. The concept of AIS is taken from the study of human body immune system which contains several mechanisms for defense against pathogenic organisms. This research represented that QIAIS optimization technique had a better performance compared to single AIS optimization technique. QIAIS optimization had a minima total losses and a better computation time. An IEEE 30-bus system is used in this study.

Keywords:

*Loss minimization, Load Shedding (LS), Artificial Immune System (AIS), Quantum Inspired Artificial Immune System (QIAIS)*

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