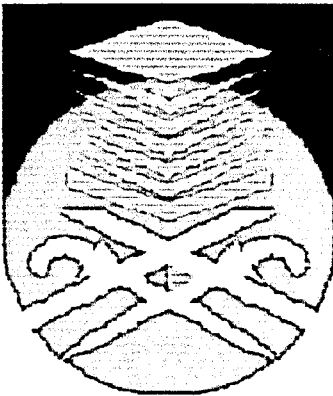


**ECONOMIC POWER DISPATCH OF POWER SYSTEM WITH
POLLUTION CONTROL USING ANT COLONY OPTIMIZATION**

**Project report is represent in partial of fulfillment for the award of the Bachelor of
Electrical Engineering (Hons)**

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“In the name of Allah the Most Gracious, the Most Merciful”

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ABSTRACT

The problem of economic dispatch has been forwarded and solved by numerous methods such as dynamic programming, *tabu* search, simulated annealing and genetic algorithm (GA). In this project, Ant Colony Optimization (ACO) is used to solve the problem of economic dispatch with pollution control. The objective is to minimize the total fuel cost of generation and environmental pollution. ACO offer a new powerful approach to these optimization problems made possible by the increasing availability of high performance computers at relatively low costs. CPU times can be reduced by decomposing the optimization constraints of the power system to active constraints manipulated directly by ACO and passive constraints maintained in their soft limits using a conventional constraint load flow. Simulation results on the IEEE 30-bus system show that by using this method, the solution to economic dispatch problem can be obtained.

Keywords: Power Systems, Pollution Control, Ant Colony Optimization.

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