

Hydro Thermal Coordination using Particle Swarm Optimization

This thesis is presented in partial fulfillment for the award of the Bachelor of
Engineering (Honours) (Electrical)

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ACKNOWLEDGEMENT

First of all, I would like to thank ALLAH S.W.T, for giving me the strength and will in completing this thesis.

I also like to express my special thank to Assoc. Prof. Bibi Norasiqin Sheikh Rahimullah, who has supported me throughout my thesis with her patience and guidance while encouraging me to work creatively. The experience and knowledge that I gained during preparing this thesis are useful and meaningful for pursuing my career in engineering field.

My gratitude also goes to my family for their courage and support for me to overcome the obstacles and difficulties during the completion of this thesis.

I offer my sincerest gratitude to all the academic and technical staff of Faculty of Electrical Engineering, Universiti Teknologi Mara and to my friends who have helped me either directly or indirectly in completing this thesis.

ABSTRACT

This thesis presents a solution for solving Hydrothermal Coordination (HTC) problems using Particle Swarm Optimization (PSO). Scheduling the Hydro and Thermal energy in the most economic manner has become an important task in modern power systems because of the increasing competition in power market. An important objective in the operation of such a power system is to generate and transmit power to meet the system load demand at minimum fuel cost by an optimal mix of various types of plants. Particle swarm optimization (PSO) algorithm is developed to give the economical cost for hydrothermal generation while fulfill the constraint of thermal and hydro unit. Total generation must meet the demand of the power system. The algorithm is developed using MATLAB program and tested on a system comprising or the one thermal unit and one hydro unit. The results are also compared with those obtained by using Lagrange Multiplier method. This comparison shows that PSO is able give better cost in solving HTC problem.

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