# COMBINED HEAT AND POWER ECONOMIC DISPATCH USING SHUFFLED FROG LEAPING ALGORITHM (SFLA)

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# ABSTRACT

This thesis discusses the solution of combined heat and power economic dispatch (CHPED) problem using shuffled frog leaping algorithm (SFLA), which is inspired by the behavior of a group of frogs to find a place that has the most food for an optimization technique purposes that has been developed for solving the CHPED problem. In this study, the CHPED problem is divided into two problems part which are the heat dispatch and the power dispatch problem. The most important purpose of this study is to find out the minimum fuel cost of the optimal point of power and heat generation. The proposed SFLA method is developed using MATLAB programming. The SFLA method is tested on four generators units consists of a single conventional power unit, a single heat-alone unit and two co-generation units. The results obtained proved that SFLA is able to achieve the best convergence with minimum fuel cost while obtaining the optimal point in power and heat.

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