

## OPTIMAL HEAT AND POWER DISPATCH IN CO-GENERATION SYSTEMS USING FIREFLY ALGORITHM

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### ABSTRACT

*Nowadays, combined heat and power units, which produce both heat and electric power, are increasing in different industries. Hence, the economic dispatch problem for these industries to optimize the fuel cost is quite complex. Several classical and meta-heuristic algorithms have been proposed earlier. The problem which is used in this paper is non-linear, non-smooth and non-convex. Firefly algorithm is applied to two test cases with different characteristics. The obtained results demonstrate the efficiency of the proposed method in solving non-convex and non-smooth problems, with considering and not considering the transmission loss and also with both equal and different initialization of the problem for the same combined heat and power units.*

**KEYWORDS:** *Combined heat and power (CHP); economic dispatch (ED); firefly algorithm (FA)*

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