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Energy Optimal Consumption in Squirrel Cage Induction Motor Using Firefly Algorithm Optimization

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Abstract-- Motors are by far the most important type of electric charges, and so constitute the main targets to achieve energy saving. Every effort to save energy in motor application can be made by always attempting to use energy only as much as what needed during its operation. It can be achieved by optimizing the induction motor design. This paper presents a firefly algorithm for optimizing the IM design considering different formulations in order to show how we can handle the design process for certain characteristics. The proposed method has been applied to optimize the design of squirrel cage induction motor having specifications 37kW, 380V, 60Hz. The validity of the design results is clarified by comparison between calculated results and existing ones.

Keywords: Energy saving, Squirrel cage induction motor, Formulation, Optimization, Firefly algorithm

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