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Modelling and Simulation in Engineering

Process Optimization of Biodiesel Production Using the Laplacian Harris Hawk Optimization (LHHO) Algorithm

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Abstract

Continuous power consumption from standard fuel resources is responsible for producing large-scale environmental greenhouse gases. Production of biodiesel fuels from the vegetable oils can be considered an alternative source. Effect of greenhouse gases can also be diminished. The production of biodiesel is done by a chemical process namely transesterification and usually maximized by using the Response Surface Methodology (RSM) tool. This paper presents a new approach to optimize the production of biodiesel by introducing a new variant of recently published metaheuristic Harris Hawk Optimization (HHO). The developed variant is based on the replacement of random numbers of normal distribution at the initialization