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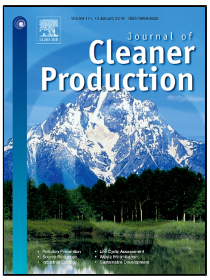

Renewable energy utilization method: a novel Insulated Gate Bipolar Transistor switching losses prediction model

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Highlights:

1. A novel switching losses prediction model based on the support vector machine optimized by the improved chicken swarm optimization algorithm was established.
2. This novel model is modified on the basis of the chicken swarm optimization algorithm.
3. The dynamic inertia weight and the part of learning from optimal individuals were introduced to the location updating formula of chicks, so that the chicks could forage flexibly and jump from the local optimal solutions.
4. The novel model contributes to the accurate prediction of the switching losses. It also has an important guiding significance for the improvement of renewable energy utilization and the system reliability.