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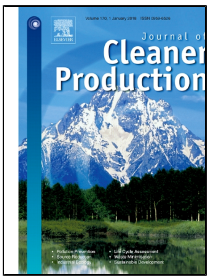

A new double flexible job-shop scheduling problem integrating processing time, green production, and human factor indicators

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Highlights

- A double flexible job-shop scheduling problem (DFJSP) is originally proposed, in which both workers and machines are flexible.
- A multi-objective optimization mathematic model considering the processing time, green production and human factors is constructed to descript the DFJSP.
- A new hybrid genetic algorithm (NHGA) is proposed to solve the proposed DFJSP, in which a new well-designed three-layer chromosome encoding method and some effective crossover and mutation operators are developed.
- Ten benchmarks of DFJSP were presented and solved using both the proposed NHGA and NSGA-II. Based on a comparison of their results, we can see that the proposed NHGA has advantages in solving accuracy and efficiency for the DFJSP.