



Engineering Optimization >

Volume 48, 2016 - [Issue 10](#)

463 | 23 | 0
Views | CrossRef citations to date | Altmetric

Original Articles

A new Nawaz-Enscore-Ham-based heuristic for permutation flow-shop problems with bicriteria of makespan and machine idle time

Weibo Liu, Yan Jin & Mark Price

Pages 1808-1822 | Received 17 Jun 2015, Accepted 06 Jan 2016, Published online: 18 Feb 2016

Cite this article <https://doi.org/10.1080/0305215X.2016.1141202>

Check for updates

Sample our Engineering & Technology Journals
>> [Sign in here](#) to start your access to the latest two volumes for 14 days

Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

Abstract

A new heuristic based on the Nawaz-Enscore-Ham algorithm is proposed in this article for solving a permutation flow-shop scheduling problem. A new priority rule is proposed by accounting for the average, mean absolute deviation, skewness and kurtosis, in order to fully describe the distribution style of processing times. A new tie-breaking rule is also introduced for achieving effective job insertion with the objective of minimizing both makespan and machine idle time. Statistical tests illustrate better solution quality of the proposed algorithm compared to existing benchmark heuristics.

Keywords:

Acknowledgement

The PhD scholarship supported by the Queen's University Belfast and China Scholarship Council is acknowledged.

Disclosure statement

No potential conflict of interest was reported by the authors.

Related research

People also read

Recommended articles

Cited by
23

Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources
by email

 Sign me up

  

  

Copyright © 2026 Informa UK Limited Privacy policy Cookies Terms & conditions

Accessibility



Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG