International Journal of Production Research ›
Volume 57, 2019 - Issue 17

1,296 Views | 35 CrossRef citations to date | 0 Altmetric

Articles

Using queuing theory and simulated annealing to design the facility layout in an AGV-based modular manufacturing system

Chen Chen & Lee Kong Tiong

Pages 5538-5555 | Received 20 Feb 2018, Accepted 30 Sep 2018, Published online: 16 Oct 2018

Cite this article https://doi.org/10.1080/00207543.2018.1533654 Check for updates

We Care About Your Privacy

We and our 902 partners store and access personal data, like browsing data or unique identifiers, on your device. Selecting I Accept enables tracking technologies to support the purposes shown under we and our partners process data to provide. Selecting Reject All or withdrawing your consent will disable them. If trackers are disabled, some content and ads you see may not be as relevant to you. You can resurface this menu to change your choices or withdraw consent at any time by clicking the Show Purposes link on the bottom of the webpage .Your choices will have effect within our Website. For more details, refer to our Privacy Policy. Here

We and our partners process data to provide:

Use precise geolocation data. Actively scan device

I Accept

Reject All

Show Purpose

Full Ar

Repri

Abstra

An a nufacturing prefabri m^2. Due to large tim er plant space is enders manufac ements. An open qu uction system. ptimisation problem, simulated annealing (SA) was applied to search for a good solution. The

combination of an OQN model and SA provides a powerful tool to solve the facility layout problem for a stochastic flow production system. The experimental results show that the proposed approach has the potential to guide industrial layout design and practice.

Keywords:

facility layout | flow lines | queuing theory | modular manufacturing | simulated annealing

Acknowledgement

The authors thank the industrial partner of this project – Excel Precast Pte Ltd for their financial support, valuable practical recommendations and guidance, and a lot of time spent on discussions. Without their help, it is impossible for the authors to design a production system with practical values for the industry. The authors also appreciate the help from Prof. Peter J. Edwards (School of Property, Construction and Project, RMIT University, Melbourne, Australia) who have spent time reading and polishing the paper. Finally, the authors thank the anonymous reviewers whose comments and suggestions helped to improve the layout and presentation of this paper.

Disclo

No poter

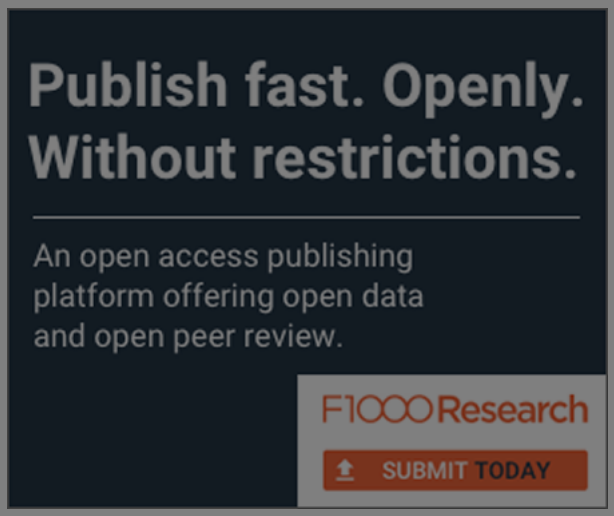
ORC

Chen Ch

Addit

Fundin

The work was supported by the National Research Foundation of Singapore [grant number NRF IIP project M4098029].



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

Accessibi

Registered
5 Howick Pl

or & Francis Group
orma business