



International Journal of Production Research >

Volume 51, 2013 - [Issue 23-24: 50th Volume Anniversary](#)

1,524 35

Views

CrossRef citations to date

0

Altmetric

Articles

# Contributions to the design and analysis of cellular manufacturing systems

Ronald G. Askin

Pages 6778-6787 | Received 18 Feb 2013, Accepted 04 Jul 2013, Published online: 08 Aug 2013

Cite this article <https://doi.org/10.1080/00207543.2013.825745>

Sample our  
Economics, Finance,  
Business & Industry 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

The application of group technology concepts to the design and operation of manufacturing cells has had a major impact on improving the performance of multiproduct, moderate volume manufacturing systems. Initially, the research on manufacturing cells focused primarily on methods for identifying rational part families and machine groups using only basic processing data. However, the comprehensiveness of the problem definition and the supporting decision models have evolved over time to include many relevant organisational issues and options. This paper reviews the developments in this area with particular emphasis on the leading contribution of the International Journal of Production Research. Based on those contributions, a more complete, general formulation for the design of manufacturing cells is presented.

Keywords:

## Acknowledgements

While all the authors contributing to this field deserve acknowledgement, this author would like to particularly thank Scott Shafer, Gursel Suer, Urban Wemmerlöv and Mingjun Xia for their helpful suggestions that contributed to the content of this article.

### Related Research Data

[Worker assignment in cellular manufacturing considering technical and human skills](#)

Source: International Journal of Production Research

[Machine-component grouping in production flow analysis: an approach using a rank order clustering algorithm](#)

Source: International Journal of Production Research

[A review of production control problems in cellular manufacture](#)

Source: International Journal of Production Research

[Design of cellular manufacturing systems: An invited review](#)

Source: European Journal of Operational Research

[Evaluation of manufacturing cell loading rules for independent cells](#)

Source: International Journal of Production Research

[ZODIAC—an algorithm for concurrent formation of part-families and machine-cells](#)

Source: International Journal of Production Research

[A survey of design methods for manufacturing cells](#)

Source: Computers & Industrial Engineering

## Related research

People also read

Recommended articles

Cited by  
35

## 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



**Taylor & Francis**  
by informa