



Engineering Optimization >

Volume 40, 2008 - Issue 6

1,126 | 189

Views | CrossRef citations to date | Altmetric

0

Original Articles

The use of a grey-based Taguchi method for optimizing multi-response simulation problems

Yiyo Kuo , Taho Yang & Guan-Wei Huang

Pages 517-528 | Received 24 Jan 2007, Published online: 20 May 2008

Cite this article <https://doi.org/10.1080/03052150701857645>

Sample our
Mathematics & Statistics
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

Simulation modelling is a widely accepted tool in system design and analysis, particularly when the system or environment has stochastic and nonlinear behaviour. However, it does not provide a method for optimization. In general, problems contain more than one response, which are often in conflict with each other. This article proposes a grey-based Taguchi method to solve the multi-response simulation problem. The grey-based Taguchi method is based on the optimizing procedure of the Taguchi method, and adopts grey relational analysis (GRA) to transfer multi-response problems into single-response problems. A practical case study from an integrated-circuit packaging company illustrates that differences in performance of the proposed grey-based Taguchi method and other methods found in the literature were not significant.

The grey-based Taguchi method thus provides a new option when solving a multi-response simulation-optimization problem.

Keywords:

grey relational analysis

integrated circuit packaging

multiple attribute decision making

simulation optimization

Taguchi method

Acknowledgements

The authors thank the anonymous company for providing the case study. This work was supported in part by the National Science Council of Taiwan, Republic of China, under grants NSC-94-2213-E-432-002 and NSC-94-2213-E-006-019.

Related research

People also read

Recommended articles

Cited by
189

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