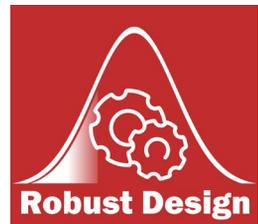


Call for Papers for a Thematic Collection

Robust Design Methodology

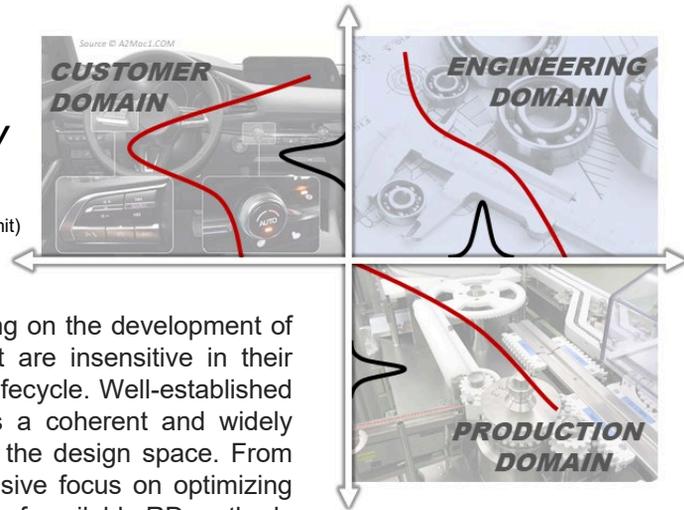


DESIGN SCIENCE JOURNAL

Thematic Collection *Robust Design Methodology*

Submission Deadline - 31 January 2021

(Papers received after the deadline may still be considered if time and space permit)



Robust Design (RD) is an engineering approach focusing on the development of products, mechanisms, and production equipment that are insensitive in their reaction to different sources of variation in the product lifecycle. Well-established in the quality-by-design domain, Robust Design offers a coherent and widely appreciated approach for the parametric exploration of the design space. From the perspective of design research however, this exclusive focus on optimizing fairly complete solutions drastically reduces the potential of available RD methods and tools.

Against this background, a new methodical perspective on robustness along the entire product development process seems needed to unleash its full potential for the efficient and successful development of innovative solutions across a wide range of (newly emerging) application areas. Examples are the development of smart and connected systems that rely on an accurate and consistent data transfer, the assurance of longevity and safety of highly automated or even autonomous products, the management of design trade-offs in more and more integrated products, or the consideration of robustness in increasingly large and complex engineering systems and networks.

In order to stimulate a discussion, this thematic collection therefore seeks to report on the latest developments in RD and to systematically explore the wide range of robustness-related topics in design research. Addressing a multitude of different perspectives, including but not limited to the traditional engineering domains, the aim is to collect and discuss different achievements and methodical approaches that relate to the fundamental idea of robustness while going beyond the traditional design of experiments based RD strategies. This naturally also includes a discussion of robustness in connection to related development paradigms such as reliability engineering, and resilience engineering. In order to underline the essential element of practice in RD, the thematic collection furthermore greatly welcomes [Design practice briefs](#), i.e. specialty papers that report on actual design work in industry.

Example Collection Theme Topics:

- Early stage robustness indicators and methods
- Computer-aided robust design and optimisation
- Analysis of perceptual robustness
- Robust Design for reliability and longevity
- Robust Design Workflows and Implementation
- Robust Design case studies (*Design Practice Briefs*)
- Robustness, reliability and resilience
- Robustness of connected products, cyber-physical and autonomous systems
- Computational synthesis of robust systems
- Design and analysis of network robustness
- Other engineering application of Robust Design

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