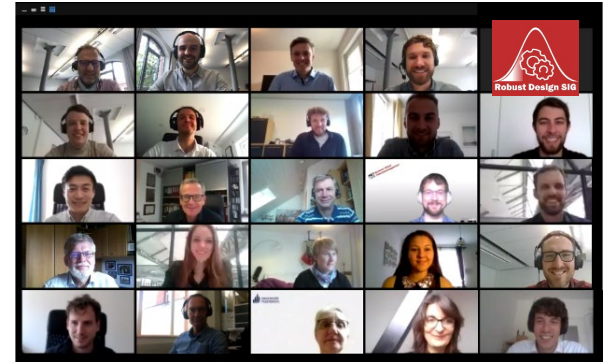


Robust Design SIG

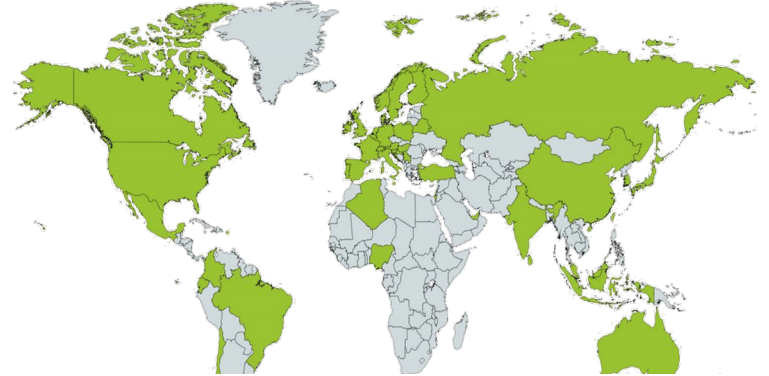
Introduction



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Design Society

The **Design Society** is an interdisciplinary community of academics and industry practitioners with the goal of developing and promoting a **robust, usable** and **scalable** means of designing solutions to complex problems, that a **sustainable** and **globalised society** needs to thrive, in the 21st century.



900+ current members 48 countries

www.designsociety.org

The Design Society is a charitable body, registered in Scotland, number SC 031694, Registered Company Number: SC401016

Our Special Interest Groups (SIGs)

COGNITIVE
DESIGN
SCIENCE

sig

COLLABO-
RATIVE
DESIGN

sig

DECISION
MAKING
IN DESIGN

sig

DESIGN
CREATIVITY

sig

DESIGN
EDUCATION

sig

DESIGN FOR
ADDITIVE
MANUFACTUR-
ING

sig

DESIGN
MANAGEMENT

sig

DESIGN
PRACTICE

sig

DESIGN
PROCESS

sig

DESIGN
SKETCHING

sig

DESIGN
THEORY

sig

HEALTH
SYSTEMS
DESIGN

sig

HUMAN
BEHAVIOUR
IN DESIGN

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PRODUCT-
SERVICE
SYSTEMS

sig

RISK
MANAGEMENT
PROCESSES
AND METHODS
IN DESIGN

sig

ROBUST
DESIGN

sig

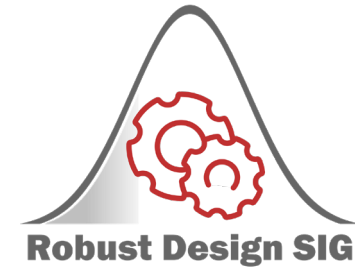
SUSTAINABLE
DESIGN

sig

Existence: since February 2014
(new leader group since 2018)

SIG leaders: Tobias Eifler (Technical University of Denmark)
Benjamin Schleich (FAU Erlangen)

Purpose: a forum for academics and practitioners who are interested in a ***design-focused*** and ***interdisciplinary*** view on Robust Design.



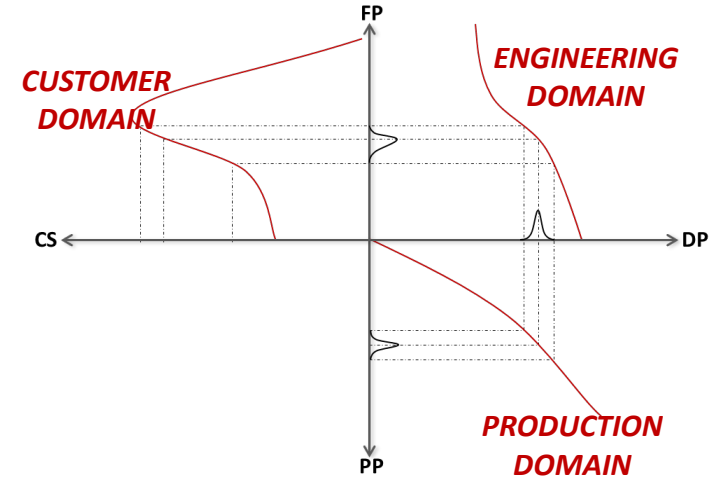
The aim is to provide a ***discussion platform*** for networking, for exchanging knowledge, for sharing experiences / case studies, as well as for working on common educational material and collaborative research.



SIG Objectives:

stimulate discussions and further research on **BENEFITS** and potential **LIMITS** of Robust Design by:

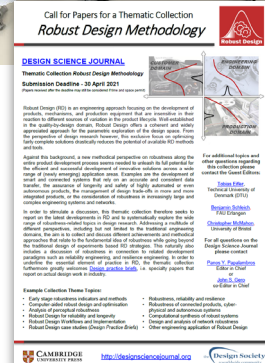
- (1) exchanging knowledge and experiences about Robust Design and related disciplines.
- (2) standardising terminology/frameworks across domains.
- (3) rethinking current RD education and share educational material.
- (4) identifying synergies and collaborate on publications /research proposals.



Source: Howard et al. (2017) - Variation Management framework – a unifying graphical representation of robust design. <http://dx.doi.org/10.1080/08982112.2016.1272121>

SIG activities to date ...

- Conference Workshops:
 - ICED'13 / Seoul – RD Toolbox (case: Laser system)
 - Design'14, Dubrovnik – Forensic Engineering (case: Ignition Switch)
 - ICED'15, Milan – Robust Embodiment Design (case: Glue Gun)
 - RDD'16, Copenhagen – Variation Management (case: Smartphone wind meter)
 - ICED'17, Vancouver – RD Toolbox/Research landscape (case: Toyota gas pedal)
 - ICED'19, Delft – Trade-off decisions and robustness in (case: Lego lifting mechanism)
- Robust Design Events (DTU/Copenhagen): ISoRD'14, RDD'15, RDD'16, RDD'17, ...
- Summer School on Tolerance Management (FAU/Erlangen)
- Ongoing: Thematic Collection on Robust Design Methodology in Design Science



DS Special Interest Group

Robust Design



Robust Design SIG - at a glance

Most practitioners as well as academics relate Robust Design to the name Taguchi, and thus to the parametric

We would like to invite PhDs and faculty members, who are interested in discussing current RD research and future ideas, to participate in an online seminar series.

With the planned seminars, we hope to bring research and researchers closer together by providing:

- a regular opportunity to share and discuss ideas and new research in the field of Robust Design,
- a platform for exploring and mapping out the variety of robustness related research areas,
- a possibility to better connect and increase collaboration.



Join us for an initial discussion: <https://dtudk.zoom.us/j/64284155997>

In general under: <https://robust.designsociety.org/29/Robust+Design+Seminar+Series>

A couple of thoughts for the first seminar

- A short introduction round
(who are you / what are you working with?)
- Research presentation
(by Prof. Kevin Otto / University of Melbourne)
- Feedback on the idea of a seminar series
(Format / interest to participate / to present?)
- SIG activities in general
(wish list / ideas for activities /
how to provide real value?)

Participation list under:

<https://docs.google.com/spreadsheets/d/1Edl39NB2yPGzhT5VA4MQiwZbH1mYMi4Hpzcm3EZEuxo/edit?usp=sharing>



- **Format of the seminar series**
 - Bi-monthly online meetings
(interest to participate / to present?)
 - Research presentation
(30min on more fully developed research)
 - PhD presentation
(short overview in two consecutive meetings)
 - Providing an industry platform
(industry delegates in all/some meetings?)

Month	Date/time	Research Group	Topic
June	10th / 3pm (CEST)	Roundtable	Introduction & Discussion
September	14th / 1pm (CEST)	Prof. Kevin Otto University of Melbourne	Uncertainty Quantification and Reduction Using Sensitivity Analysis and Hessian Derivatives
November	tbd	Technical University of Denmark	Robust Design based on trade-off management in mechanical development
January	tbd	FAU Erlangen	Robustness and tolerances - on the role of tolerance design in RDM
...	let us know if your interested to present your research (SIG contact)		

- **Other SIG activities**

Joint research activities, SIG library, conference & workshops (e.g. also Norddesign conference 2022 in CPH)

Thank You

*All comments and
suggestions are of course
more than welcome*

Just let us know

(tobeif@mek.dtu.dk, schleich@mfk.fau.de)

