DTU Robust Design Group
News & Updates

Robust Design Day
08th of November 2017
Technical University of Denmark (DTU)

Ass. Prof. Tobias Eifler
Head of DTU RD Group
tobeif@mek.dtu.dk

DTU Mechanical Engineering
Department of Mechanical Engineering
Why Robust Design?

“Robust Design is the designing of products, devices & production equipment so that their performance is insensitive to different sources of variation, e.g. manufacturing, external noise factors, degradation, etc.”

Design Parameters:
1. Length of legs
2. Angle of legs
3. Flatness of seat
4. Flatness of ground
5. etc....

Source: Skakoon (2009) – Exact constraint
Why Robust Design research?

Source: http://www.dailymail.co.uk/
Why Robust Design research?

Søren Pedersen (end 2017)

PhD
Variation in the FRs and the perceived quality of the product

CUSTOMER DOMAIN

Q
Customer Satisfaction (%)

FR
Press on Force (N)

<table>
<thead>
<tr>
<th>Lid Ø (mm)</th>
<th>Press on Force (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0</td>
<td>8.2</td>
</tr>
<tr>
<td>9.8</td>
<td>8.28</td>
</tr>
<tr>
<td>10.1</td>
<td>10.0</td>
</tr>
<tr>
<td>9.8</td>
<td>10.1</td>
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<table>
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<tr>
<th>Mould Core Ø (mm)</th>
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<tbody>
<tr>
<td>8.2</td>
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<tr>
<td>8.12</td>
</tr>
<tr>
<td>8.12</td>
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<tr>
<td>8.2</td>
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<td>8.28</td>
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Changes in the group 2017

- New Head of the Group
- 2 finished PhD projects
- 1 new project in the pipeline

Kristian Bjarklev
PhD
The relationship btw. variation in multiple DPs and multiple FRs

Early Stage variation management and tolerancing activities

Simon Göhler (end 2017)

PhD

Simon Göhler (end 2017)

PhD

Søren Pedersen (end 2017)

PhD

PhD

Kristian Bjarklev
PhD

Boorla Murthy
PhD

Why Robust Design research?

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PhD

Simon Göhler (end 2017)

PhD

Boorla Murthy
PhD

Thesis title
Thesis title
Thesis title
Thesis title

Design Guide for Robust Production and PCDBs
The last year at DTU

First of all Congratulations

Dr. Simon Moritz Göhler
PhD title: Metric-driven Robust Design – Robustness Quantification of Complex Engineering Systems

Dr. Søren N. Pedersen
PhD title: Perceptual Robust Design

April 5th 2017
The last year at DTU

Educational Progress:

- 100 students/semester graduating from the Robust Design Course
  (top 20% received Six Theta DTU certification)

- MSc projects (Grundfos, Valcon, Novo Nordisk, Coloplast, Velux, etc.)

- Exploring new fields: Design Optimisation, Robustness & Reliability, Design Space search etc.
The last year at DTU

Publications:
Offerings in the Foyer

Information on:

- publications from the DTU Robust Design Group
- Robust Design education and training at the DTU
- student projects in collaboration with industry
- the Robust Design workshop series
- etc.