Development of reliable products based on Physics of Failure

Learn about the most recent results of the performance contract and get inspiration on how to enhance reliability and robustness based on knowledge of Physics of Failure.

In today’s global society, reliability is an important factor in achieving competitive advantages. The proper level of reliability and robustness is critical in order to be successful and avoid dissatisfied customers, prolonged product development processes and excessive service and warranty costs.

Yet, it is a specialised field of expertise. To be updated with this expertise requires many resources, while you focusing on the core competences of your business.

This conference which is intended to be an annual event during the performance contract i.e. 2016 – 2018 brings you up-to-date with results of research from the Aalborg Universitet, development from the performance contract as well as practise in successful companies.

The topics of the conference are

• Systematic methods to analyse and identify failure mechanisms and how failure analysis serves as a tool to improve reliability
• Failure mechanisms in components under stress
• Acceleration models, reliability estimation, and accelerated life testing
• Software reliability
• The reliability process

Your benefit from this conference is

• Increased knowledge about failure mechanism and Physics of Failure
• Methods for designing accelerated tests based on Physics of Failure
• Useful tools for implementation of reliability in the development process
• Inspiration and general exchange of experience with peers

The target group of the seminar is R&D, reliability, quality, and test managers as well as engineers who want to know more or share their knowledge about reliability based on Physics of Failure.

DATE
31 October 2016, 09:00 – 16:00

VENUE
DELTA Hørsholm, Venlighedsvej 4, 2970 Hørsholm

SIGN UP

PRICE
The conference is free for SPM-members, but with a no-show fee of DKK 500,-. The fee for non-SPM members is DKK 950,-

The conference fee is non-refundable/registration is binding. However, a colleague can take your place if you are prevented from participating.

CONTACT
Susanne Otto, DELTA, +45 24 23 36 60 or suo@delta.dk

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## Agenda

<table>
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<th>Time</th>
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| 09.00 – 09.30 | Welcome and introduction to the performance contract ‘Development of reliable products based on Physics of Failure’  
                Susanne Otto, DELTA                                                                                                       |
| 09.30 – 10.15 | Critical incidents on large structural assets – the ultimate Physics of Failure  
                Failures on large industrial assets like power plants and offshore platforms may have dramatic consequences. It is therefore of utmost importance to understand the incidents on critical components that may lead to a series of secondary damages.  
                Lisbeth Hilbert, Force Technology                                                                                               |
| 10.15 – 11.00 | Acceleration models and reliability prediction in microelectronics  
                Jozsef Harsanyi, Oticon                                                                                                        |
| 11.00 – 11.15 | Coffee break                                                                                                                             |
| 11.15 – 12.00 | Several ways to establish ‘life-time’ data – a case  
                The case shows how data for life-time expectancy can be found in 3 different ways i.e. by traditional MTBF calculation, by using the ‘Halt Calculator’ and data from thermomechanical HALT test, and by performing a dedicated CALT test.  
                Kim A. Schmidt, DELTA                                                                                                          |
| 12.00 – 12.45 | Lunch                                                                                                                                     |
| 12.45 – 13.30 | Selected failure mechanisms of active and passive components under stress  
                Francesco Iannuzzo and Huai Wang, Aalborg University                                                                            |
| 13.30 – 14.15 | Reliable hardware! What about the software?  
                This presentation discusses elements that increase the reliability of the software. It also covers effects of agile development process as well as traditional V-model elements and how to mix them. Further, the presentation will seek inspiration from development of safety critical systems and medico-systems.  
                Carsten Jørgensen, DELTA                                                                                                         |
| 14.15 – 14.30 | Coffee break                                                                                                                             |
| 14.30 – 15.15 | Failure Analysis as a tool to improve reliability – an important part in the Physics of Failure approach  
                Failures in the field occur – some tools can be used to get the overview, build thesis and other tools/methods can get you deep into understanding of a specific failure and the mechanism behind. A case story where several improvements had been implemented but the required reliability still not reached – let’s see what can be done.  
                Helle Rønsberg, DELTA                                                                                                          |
| 15.15 – 16.00 | ‘The Automotive Experience: How Even A Great Process That Integrates Physics Of Failure With Statistics And Lifetime Requirements Can Fail’  
                Larry Edson                                                                                                                         |
| 16.00-16.15   | Closing notes                                                                                                                            |