Organisational Information

For registration please use the registration form which is available on the ECPE web page: www.ecpe.org > ECPE Events > ECPE Workshop: Reliability Engineering - 10 Years Robustness Validation > Registration Form

www.ecpe.org/ecpe-events

Deadline for registration:

- **17 January 2018**

Participation fee:

- **€ 595,–** * for industry
- **€ 445,–** * for universities/institutes
- **€ 150,–** * for students/PhD students
  (copy of student ID requested)
  (limited number only)
  (optional dinner: € 50,-* extra fee)

*plus 19 % VAT

- The participation fee includes dinner, lunches, coffee/soft drinks and a flash drive with the workshop presentations. Students/PhD students can book the dinner for an extra fee of € 50,-*
- A printed version of the workshop handout is available on request (€ 50,-*).
- With the confirmation of registration by email you are registered for the workshop and the invoice will be sent by post.
- Three participants from each ECPE member company free of charge. Allocation in sequence of registration.
- Further information (hotel list and maps) will be provided after registration and is available on the ECPE web page.
- In case of cancellation later than two weeks before beginning or non-attendance 50 % of the participation fee is payable.

Organisational Information

Organiser	ECPE e.V. 90443 Nuremberg, Germany www.ecpe.org
Chairmen	Prof. Eckhard Wolfgang ECPE e.V. Dr. Jörg Breibach Robert Bosch
Organisation	Lena Somschor, ECPE e.V. +49 911 81 02 88 – 18 lena.somschor@ecpe.org
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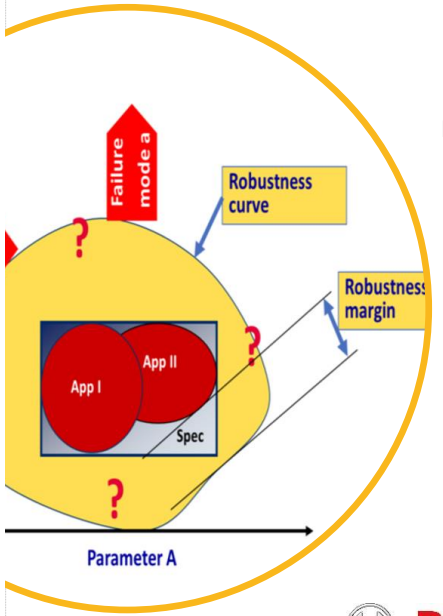
ECPE
European Center for
Power Electronics e.V.

Draft Programme

ECPE Workshop

Reliability Engineering
10 Years Robustness Validation



24 - 25 January 2018
Filderhalle
Leinfelden-Echterdingen
Germany

in cooperation with

BOSCH
Invented for life

ECPE Workshop

Reliability Engineering
10 Years Robustness Validation

24 - 25 January 2018
Leinfelden-Echterdingen, Germany

What has been achieved
and what are the main challenges?

The first handbooks on Robustness Validation were available in the years 2006/07. They were worked out by the German ZVEI, the US SAE and the Japanese SAE.
They describe a process how to design, develop, manufacture and test electronic devices, components and systems. It is a process based on the knowledge of:
- the conditions of use (mission profile),
- the failure mechanisms,
- and of accelerated models needed for accelerated tests

This involves a paradigm shift from "test for standards" to "test-to-fail". The Physics-of-failure and End-of-life test approach requires a lot of new strategies and methods, which will be discussed by OEMs, 1st Tiers and 2nd Tiers as well as Academia.
To underline the character of a workshop two Panel discussions are dealing with:
- Design and Technology
- What about the future?

Finally it will be discussed how future may look like.

The workshop is chaired by:
Prof. Eckhard Wolfgang, ECPE
Dr. Jörg Breibach, Robert Bosch
Thomas Harder, ECPE

All presentations and discussions will be in English language.

Programme

Wednesday, 24 January 2018

9:30 **Start of Registration / Welcome Coffee**

10:00 **Welcome, Opening**
Eckhard Wolfgang, Thomas Harder, ECPE (D)
Jörg Breibach, Robert Bosch (D)

10:20 **Robustness Validation Overview**
Andreas Preussger, Preussger Consulting (D)

RV: Application Environment

10:50 **Reliability of Automotive LEDs**
Wolfgang Pohlmann, Hella (D)

11:20 **Reliability of LEDs: Rth vs. Temperature – Impact on Lifetime Modeling**
Stefan Schoemaker, OSRAM (D)

11:40 **Qualification Extension from Automotive to Harsh Aerospace Mission Profiles**
Alberto Mancaleoni, STMicroelectronics (I)

12:10 **Comprehensive Methodology for Reliability Qualification of Smart Power Technologies**
Antonio Andreini, STMicroelectronics (I)

12:40 **Synthetic Mission Profiles**
Stefan Straube, Fraunhofer IZM (D)

13:10 **Lunch**

RV: Focus on Requirements and Technology

14:10 **Lifetime Modeling Strategies in the Context of Automotive Requirements**
Olaf Wittler, Fraunhofer IZM (D)

14:40 **RV in Context with AEC100/ 101 Appendix 7 Qualification**
Ulrich Abelein, Infineon Technologies (D)

15:10 **Robustness Validation of Cu-wire in Semiconductor Devices for High Temperature Automotive Applications**
Rene Rongen, NXP Semiconductors (NL)

15:40 **Coffee Break**

Panel Session "Design and Technology"

16:00 Moderator: Jörg Breibach, Robert Bosch (D)

18:00 **End of 1st Workshop Day**

19:30 **Dinner at Parkhotel Stuttgart Messe-Airport**

Programme

Thursday, 25 January 2018

8:30 **Start of 2nd Workshop Day**

Power Modules and PE Systems

8:30 **Power Module an DC-Link Capacitor Qualification**
Martin Rittner, Robert Bosch (D); Markus Thoben, Infineon Technologies (D); Kai Kriegel, Siemens (D)

9:00 **RV for Industrial Power Modules**
Oliver Schilling, Infineon Technologies (D)

9:20 **Mission Profile and SiC Module Reliability**
Francesco Iannuzzo, CORPE, Univ Aalborg (DK)

9:40 **Mission Profile Based System-Level Reliability Analysis of Power Electronic Converters**
Huai Wang, CORPE Univ Aalborg (DK)

10:10 **Coffee Break**

End-of-Life Testing and Physics of Failute PoF

10:30 **Monitoring PC and TC Test**
Gerard Coquery, VEDECOM (F)

10:50 **HALT and HAST Tests**
Stefan Schmitt, Semikron (D)

11:10 **Simulation Based Derivation of Humidity Load Collectives**
Daniel Koenig, Robert Bosch (D)

11:30 **Analytics for PoF**
Matthias Petzold, Fraunhofer CAM (D)

12:10 **Ensuring the Reliability of Power Electronic Devices with Regard to Terrestrial Cosmic Radiation**
Gerald Sölkner, Infineon Technologies (D)

12:40 **Lunch**

What about the Future?

13:40 **Resilience - Reliability Engineering after RV**
Franz Dietz, Robert Bosch (D)

14:00 **Degradation - Self Correcting Systems**
Andreas Preussger, Preussger Consulting (D)

14:20 **What about Closing the Loop between Target Setting, Design and Field Failures**
Peter de Place Rimmen, Danfoss (DK)

Panel Session "What about the Future?"

14:40 Moderator: Werner Kanert, Consultant (D)

15:45 **Final Discussion**

16:00 **End of Workshop**