7th CORPE Symposium

Thursday 13th June 2019

Auditorium of the Department of Energy Technology, Aalborg University
Pontoppidanstræde 111, 9220 Aalborg East, Denmark

Aalborg University's **Centre of Reliable Power Electronics** is proud to invite professionals, scholars, experts, and those who in general are interested in the reliability of power electronics to the **7th Annual Symposium on 13th June 2019, in Aalborg, Denmark**.

Several internationally recognised speakers from industry and academia will present their views on challenges in power electronics reliability.

Afterward, presentations about the research findings and achievements from CORPE will take also place, together with a discussion about the strategic roadmap. A poster session with researchers from CORPE will also be held.

The symposium is **free of charge** (a no-show fee applies, though). Sign up for the event **here**. Please register by 31st May 2019.

We look forward to seeing you in Aalborg

Frede Blaabjerg

http://www.corpe.et.aau.dk/

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The Centre of Reliable Power Electronics (CORPE) at Aalborg University, Denmark, inaugurated in 2012, aims to design more reliable and more efficient power electronic systems for power generation, distribution and consumption. The centre strives to better understand how the reliability of power electronic devices and systems is influenced by stress factors such as temperature, overvoltage and current, humidity and other environmental factors.

The centre was established in close collaboration with major Danish power electronic companies, Aarhus University, and two leading European universities. The centre develops device and system models enabling design of power electronic systems at predicted reliability. The knowledge is also used for online monitoring to predict remaining useful lifetime and to enable smart failure control strategies. A number of advanced test systems are available in CORPE. More than 30 researchers are active (around 15 PhD's). The centre is supported by the Danish Strategic Research Council and the Obel Foundation.

INNOVATIONSNETVÆRKET SMART ENERGY
Innovation Fund Denmark
DET OBELSKE FAMILIEFOND

Programme

08:00 – 09:00	**Coffee, Networking and Registration**
09:00 – 09:10	**Welcome and a short introduction to CORPE** *Centre Leader Frede Blaabjerg, Professor, Aalborg University*
09:10 – 09:45	**"Health and Condition Monitoring: an Industrial Perspective"** *Stefan Mollov, Head of R&D, Energy&Environment, Mitsubishi, France*
09:45 – 10:20	**"Power Modules Packaging: Technology and Cost Breakdown"** *Elena Barbarini, SystemPlus/Yole Développement, France*
10:20 – 10:35	Coffee break
10:35 – 11:10	**"Reliability Testing at Vishay Semiconductor"** *Marcello Turnaturi, R&D Director, Vishay Semiconductor, Italy*
11:10 – 11:45	**"Reliable Interconnections for Si and SiC based Power Modules"** *David Benning, Process Development Director, Danfoss Silicon Power*
11:45 – 12:20	**"Predictive Maintenance Algorithms in Rockwell Automation"** *Garron Morris, Principal Engineer, Rockwell Automation, USA*
12:30 – 13:30	***Lunch and Poster Session***
13:30 – 15:15	*CORPE Presentations*
13:30 – 13:45	**"CORPE-initiated projects: APETT and REPEPS"** *Huai Wang, Associate Professor*
13:45 – 14:00	**"Thin-Film Sensors for Power Modules"** *Nick Baker, Post Doc*
14:00 – 14:15	**"Design for Reliability of PV-Battery Systems"** *Ariya Sangwongwanich, Post Doc*
14:15 – 14:30	**"Reliability Assessment in Power Electronic Based Systems"** *Saeed Peyghami, Post Doc*
14:30 – 14:45	**"Lifetime Estimation of DC Link Capacitors in Adj. Speed Drives"** *Haoran Wang, Post Doc*
14:45 – 15:00	**"Materials issues in GaN on Si for power devices"** *Kjeld Pedersen, Professor*
15:00 – 15:15	**"WBG Packaging for Low-Medium Voltage and HF Applications"** *Stig Munk-Nielsen, Professor*
15:15 – 15:30	**CORPE Overview + New Grand Initiatives: X-Power** *Francesco Iannuzzo, Professor*
15:30 – 17:00	Visit to CORPE Test Facilities
17:00	**End of the day**

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Poster Session

"LEGO-Block Analysis for Accelerated Life Test Profile Generation"
Martin Fogsgaard, Research Assistant

"Design for Reliability and Robustness (DfR2) – The next generation reliability tool for power electronics"
Ionut Vernica, Research Assistant

"Impact of the Case Temperature on the Reliability of SiC MOSFETs Under Repetitive Short Circuit Tests"
He Du, PhD Student

"Framework for Lifetime and Reliability Assessment of Residential PV-Battery Systems"
Monika Sandelic, Research Assistant

"Parameter Identification of DC-DC Power Converters Based on Dynamic Characteristics"
Yingzhou Peng, PhD Student

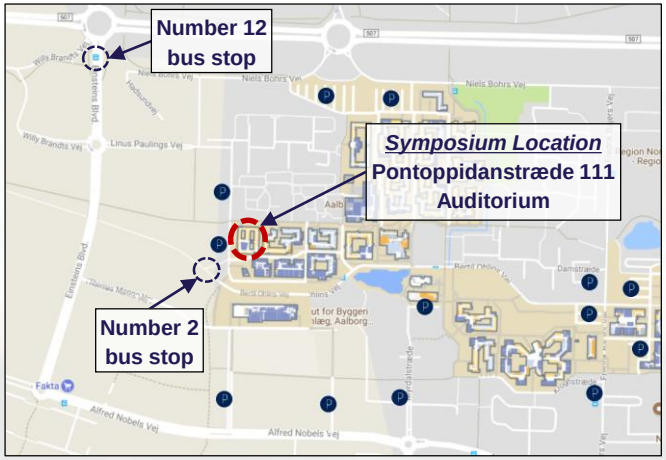
"First Observations in Degradation Testing of Planar Magnetics"
Zhan Shen, PhD Student

"TBC"
Zhijian Yin, PhD Student

"TBC"
Zhongxu Wang, PhD Student

"System-level reliability evaluation of the modular multilevel converter"
Yi Zhang, PhD Student

Map and Directions



Venue: *Auditorium of the Department of Energy Technology, Aalborg University*
Pontoppidanstræde 111, 9220 Aalborg East, Denmark

Directions from Aalborg Airport

The bus stop is directly outside the terminal building. Any number 12 bus will take you to both Aalborg city centre and to the university. The bus takes approximately 20 minutes to the centre and 40 minutes to the university. Alternatively, it is possible to take a taxi, which takes approximately 15 minutes to the city centre, or 25-30mins to Aalborg University.

Arriving by Car

From the highway *E45*, choose *Exit 26*: *Th. Sauers Vej/Universitetsboulevarden*. From Universitetsboulevarden you enter the roundabout and take the exit Einsteins Boulevard. In the next roundabout you take the third exit: Linus Paulings Vej. At the end of Linus Paulings Vej turn right. On your right side is Pontoppidanstraede's car park. Turn right when you exit the parking lot on foot. The main entrance of Pontoppidanstraede 111 is on the corner of Toppentuestien and Pontoppidanstraede.

Directions from Aalborg City Centre

The bus routes number 2 and 12 go directly to the Department of Energy Technology, both stopping close to the Symposium venue, Pontoppidanstræde 111. If taking number 12, get off at the stop 'Willy Brandts Vej (Einsteins Boulevard)' and it is around a 5-minute walk to the symposium venue. The number 2 stops at Pontoppidanstræde (Bertil Ohlins Vej), which is directly outside the symposium venue. Both bus stops and symposium venue are identified on the map above.

Detailed bus schedules at www.rejseplanen.dk (available in English).

Phone number for Aalborg Taxi: +45 7025 2525 or +45 9810 1010

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