Provisional Programme of the ISPS'14

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Tuesday, 26 August
13:00 - 17:00  Joint event - Workshop on Smart Grids

16:00 – 18:00  ISPS’14 registration

Wednesday, 27 August
8:00 – 9:30  ISPS’14 registration
9:30  Opening session (V. Benda)

9:40-11:50  Power Device Ruggedness

Cosmic Ray Induced Single-Event Burnout in Power Devices (preliminary title)
Tomoyuki Shoji, Toyota (Invited Paper)

High power IGBTs and diodes at the edge of the Safe Operating Area

Cathode Short Technology for High-Voltage Large Area Fast Recovery Silicon Diodes: The Impact of Operating Temperature
Jan Vobecky and Libor Pina

2.5kV RB-IGCT Optimized for Solid State Circuit Breaker Applications
Umamaheswara Reddy Vemulapati, Martin Arnold, Munaf Rahimo, Antonello Antoniazzi and Davide Pessina

12:00-13:00  lunch time

13:30-14:45  GaN Devices

Progress with GaN Power Devices (preliminary title)
Tatsuo Morita, Panasonic (Invited Paper)

Analysis of surface donor traps and fixed charges in GaN/AlGaN/GaN high-voltage transistors via the transfer characteristics of a MISFET
Giorgia Longobardi, Florin Udrea, Stephen Sque, Jeroen Croon, Fred Hurkx and Jan Šonský

Simulation Study of AlGaN/GaN-based Optically-controlled Power Transistor
Turar Baltynov and Shankar Madathil.

14:50 – 15:20  Coffee break

15:20-17:00  Wide bandgap: SiC and GaAs

On the Electrical Performance of Lifetime-Enhanced 4H-Silicon Carbide PiN Diodes

Operation of 4H-SiC High Voltage Normally-off V-JFET in Radiation Hard Conditions: Simulation and Experiment
S. Popelka, P. Hazdra and V. Záhlava.

Simulation of 15 A - 600 V GaAs PiN Diodes in Comparison with Experimental Results
R. Bhojani, J. Kowalsky and J. Lutz

Experimental Results of Surge Current Measurements for 600 V GaAs pin-Diodes
J. Kowalsky, T. Simon, R. K. Bhojani, J. Lutz and V. Dudek

19:00-21:00  Welcome party
**Thursday 28 August**

**8:30-10:00 DIALOG SESSION**

Detection of Deep Energy Levels in Semiconductors Using Frequency-Resolved Impedance Spectroscopy  

Anode Controlled Diode (ACD) - A New Concept for Low Loss Free-Wheeling Diode  

Measurement of $T_{vj}$ in a B6 IGBT inverter for electric vehicles using the $V_{ce}(T)$-method  
S. Hiller, Ch. Herold and J. Lutz.

JBS/SiC – Rectifier with Close to Schottky-Interface Conduction Investigated for Different High-Voltage Classes  
H. Bartolf, Vi. Sundaramoorthy and A. Mihaila.

- Using SOI capabilities to increase breakdown voltages from >650 V to > 900V  

The effect of fast light ion irradiation on 1700 V 4H-SiC MPS diode: Experimental and Simulation  
R. K. Sharma, P. Hazdra and S. Popelka.

Application-tailored development of Power MOSFET  

Fabrication and characterization of 3C-SiC MOS capacitor with high temperature oxidation  

Complementary methods for a diagnostic evaluation of physical and electrical parameters of power silicon devices  
V. Papež, J. Hájek and B. Kojecký

10:00-10:40

Photovoltaics towards Terrawatts – Progress in Photovoltaic Cells and Modules (Invited Paper)  
Vitezslav. Benda

10:40-11:00 coffee break

11:00-12:40 ROUND TABLE DISCUSSION  
“Spreading results of university research into praxis”, moderator Florin Udrea

13:00-14:00 lunch time

14:15 Excursion

19:30 Social dinner

**Friday, 29 August**

**9:00-10:15 SiC Device Driving, SiC Device Systems**

Topological and Device Cost-Performance Optimisation for 3-Phase Inverters in High Speed Electric Drive Systems  
J. Ewanchuk, G. Lefevre and S. Mollov.

Investigation of the Dynamic Voltage Rise Control (DVRC) for Fast Switching Silicon Carbide Bipolar Junction Transistors  
Ch. Bödeker, S. Rugen and N. Kaminski.

On-line temperature estimation of SiC-BJTs using Vbe thermal sensitive electrical parameters  
S. Frankeser, Ch. Herold, S. Hiller and J. Lutz
10:15-10:45  coffee break

10:45-12:00  **Package, System and Reliability**

IGBT Collector Current Sensing Using Gate Current
J. Chen, A. Shorten and Wai Tung Ng

Work on a simulation-based model for lifetime estimation in power cycling tests
P. Steinhorst, V. Fedorov, J. Lutz, B. Wielage and S. Weis

On the Degradation of IGBT Modules in the Temperature Humidity Bias (THB) Test at High Bias Levels
Ch. Zorn and N. Kaminski.

12:00  **Closing the ISPS'14**

12:30-13:30  lunch time