

# Provisional Programme of the ISPS'16

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## Wednesday, 31 August 2016

8:00 – 9:30 ISPS'16 registration

9:30 – 12:00 **Tutorials**

9:30 – 10:40 Carlo De Santi, Gaudenzio Meneghesso, Matteo Meneghini and Enrico Zanoni  
**“Dynamic effects and reliability of depletion and enhancement GaN HEMTs for power switching applications“**

Coffee break

10:50 – 12:00 Mikael Östling: **“Silicon Carbide Power Device Technology; Fabrication issues and state of the art devices”**

12:00-13:00 lunch time

13:10 **ISPS opening**

13:20-14:40 **Invited lectures 1**

*The Substrate requirements for the next generation power electronics*  
Shin-Ichi Nishizawa, AIST, Japan

*Reverse recovery of diamond pin diodes*  
Aboulye Traore, Akira Nakajima, Satoshi Yamasaki et al, AIST, Japan

14:40 – 15:20 Coffee break

15:20-16:40 **Power diodes**

*Fast Diode Anode Design Concepts for IGBT Applications*  
Charalampos Papadopoulos, Munaf Rahimo, Chiara Corvasce, Jan Vobecky, Sven Matthias and Arnost Kopta

*Novel cathode design to improve the ESD capability of 600V Fast Recovery Epitaxial Diodes*  
Luca Maresca, Andrea Irace, Michele Riccio, Rossano Carta, Nabil El Baradai, Laura Bellemo and Giovanni Breglio

*The HGTD: A SOI Power Diode for Timing Detection Applications*  
Mar Carulla, David Flores, Salvador Hidalgo, David Quirion and Giulio Pellegrini

19:00-21:00 **Welcome party**

## Thursday 1 September

### 8:30 - 9:50 DIALOG SESSION

*Accuracy Improvement of a SiC MPS Diode Electro-Thermal Model*  
Andrii Stefanskyi, Lukasz Starzak and Andrzej Napieralski

*Equivalent circuit for IGBT short circuit during on-state*  
Jan Fuhrmann and Hans-Guenter Eckel

*SiC and Si Diodes in Fast Switching High Voltage Cascades - an Experimental Study*  
Daniel Mueller, Lutz Goehler and Henry Gueldner

*Theoretical Modelling of 2DEG and 2DHG in III-Nitride based heterostructures*  
Ashwani Kumar and Merlyne De Souza

*Parasitic Effects During Turn-on and Turn-off of Silicon Carbon Diodes*  
Christian Bödeker and Nando Kaminski

*Compact modelling for GaN power switches dedicated to circuit design*  
Soroush Faramehr, Karol Kalna and Petar Igic

*Optimised Chip Design for Free Carrier Absorption Diagnostics Based on the Numerical Analysis of Carrier Profiles*  
Andreas Korzenietz, Gerhard Wachutka, Frank Hille and Christian Sandow

*Alternative level shifting devices for 900V gate drivers*  
Ralf Lerner, Andreas Kaeberlein, et al

*High-speed switch based on MOSFETs*  
Václav Papež, Martin Horák and Jiří Hájek

### 10:00 – 11:20 Invited lectures 2

*Overcoming Switching Limits in Silicon Power MOSFETs with Silicon-Based Solutions*  
Jaume Roig, Frederick Declercq and Filip Bauwens, On-Semi, Belgium

*Monolithically-Integrated Power Circuits in a High-Voltage GaN-on-Si Heterojunction Technology*  
Richard Reiner, Fraunhofer-Institut für Angewandte Festkörperphysik IAF, Freiburg, Germany

11:20 – 11:40 coffee break

### 11:40 – 12:40 MOS-Bipolar devices

*Criteria for the collector side filament formation at short-circuit in IGBTs*  
Riteshkumar Bhojnai, Shanmuganathan Palanisamy, Roman Baburske, Hans-Joachim Schulze, Franz-Josef Niedernostheide and Josef Lutz

*Cosmic Ray Withstand Capability of RB-IGBT utilizing different gate conditions*  
Daniel Hofmann and Masahito Otsuki

*A snap-back free Shorted Anode Super-Junction CIGBT*  
Peng Luo, Mark Sweet and Shankar Madathil

13:00-14:00 lunch time

14:15 *Excursion*

19:30 *Social dinner*

## Friday, 2 September 2016

9:00-10:20 **Invited lectures 3**

*IGBT-based device- and packaging technologies for future high power applications*  
Arnost Kopta, Munaf Rahimo,, et al, ABB Corporate Research, Switzerland

*IGBTs: Recent developments and future perspectives*  
Franz-Josef Niedernostheide, Hans-Joachim Schulze and Thomas Laska, Infineon, Germany

10:20-10:40 coffee break

10:40-11:40 **Package, System and Reliability**

*Modelling of Press-Pack High Power IGBT Modules*  
Hong Yao Long, Mark Sweet and Ekkanath Madathil Sankara Narayanan

*Impact of different packages on fast switching silicon carbide bipolar junction transistors*  
Christian Bodeker, Melanie Adelmund, Ranbir Singh and Nando Kaminski

*Influence of temperature on the pressure distribution inner Press-pack IGBT*  
Deng Erping, Zhao Zhibin, Zhang Peng and Huang Yongzhang

11:40- 13:00 lunch time

13: 00 – 14:20 **Engineering of devices**

*Design considerations for charge-compensated power MOSFET in the medium-voltage range*  
Ralf Siemieniec, Oliver Blank and Cesar Braz

*A New Vertical JFET Technology for Harsh Radiation Applications*  
Pablo Fernandez-Martinez, David Flores, Salvador Hidalgo, David Quirion and Miguel Ullan

*Analysis of drain current saturation behaviour in GaN Polarisation Super Junction HFETs*  
Vineet Unni and E.M. Sankara Narayanan

*Monolithic Integration of GaN-based Normally-off P- and N-channel MOSFETs*  
Akira Nakajima, Shunsuke Kubota, Kazuo Tsutsui, Kuniyuki Kakushima, Hitoshi Wakabayashi, Hiroshi Iwai, Sin-Ichi Nishizawa and Hiromichi Ohashi

14:30 **Closing the ISPS'16**