

# Programme Schedule of ISPS 2021

**Thursday, 26 August 2021**

*Registration of participants: CTU in Prague, Faculty of Electrical Engineering, Technicka 2, Prague 6 from 8:00 to 9:30*

9:45 – 10:00      **Opening session**

## **Session No. 1 “Robustness, Ruggedness and Efficiency (1)”**

10:00 – 10:40      Vera van Treek et al. (invited): “Important Criteria for the Short-Circuit Capability of IGBTs”, Infineon Technologies AG, Neubiberg, Germany

10:40 – 11:00      Madhu-Lakshman Mysore et al.: “Aluminium Modification as Indicator for Current Filaments under Repetitive Short-Circuit in 650V IGBTs”, TU Chemnitz and Infineon Technologies AG, Neubiberg, Germany

11:00 – 11:20      Madhu-Lakshman Mysore et al.: “Study of 6.5 kV Injection Enhanced Floating Emitter (IEFE) IGBT Switching Behavior and its Improved Short-Circuit Ruggedness”, TU Chemnitz and Infineon Technologies AG, Neubiberg, Germany

11:20 – 11:40      S. T. Kong, L. Ngwendson: “Experimental Comparison of a New SAG-IGBT and Conventional DAG-IGBT Structures with LTO Design in terms of Turn-on Performance”, R&D Department, Dynex Semiconductor Ltd, Lincoln, U.K.

11:40 - 13:20      **Lunch Time**

## **Session No. 2 “Robustness, Ruggedness and Efficiency (2)”**

13:20 – 13:40      Weinan Chen et al.: “High-voltage IGBT turn-off at transition from overcurrent to desaturation”, TU Chemnitz, Germany

13:40 – 14:00      L. Balestra et al.: “Current Instabilities in Large-Area Silicon Diodes: An Accurate TCAD Approach”, ARCES and DEI, University of Bologna, and Hitachi-ABB Power Grids, Lenzburg, Switzerland, and CTU Prague, Czech Republic.

14:00 – 14:20      R. Siemieniec et al.: “Power Device Solutions for Highly Efficient Power Supplies”, Infineon Technologies Austria AG, Villach, Austria.

14:20 – 14:40      Gurunath Vishwamitra Yoganath et al.: “Gate-Controlled Diode”, University of Rostock, Germany

14:40 – 15:10      **Coffee break**

### Session No. 3 “Degradation and Defects in Wide-Gap Power Devices”

- 15:10 – 15:30 J. Marek et al.: “Degradation of Power SiC Trench-MOSFET Under Repetitive UIS Stress”, Slovak University of Technology, Bratislava, Slovakia, and NanoDesign, s.r.o, Bratislava, Slovakia.
- 15:30 – 15:50 J. Kozárik et al.: “Degradation of 600V GaN HEMTs under Repetitive Short Circuit Conditions”, Slovak University of Technology, Bratislava, Slovakia, and NanoDesign, s.r.o, Bratislava, Slovakia.
- 15:50 – 16:10 A. Lachichi and P. Mawby : “TCAD Simulation of the Bipolar Degradation in SiC MOSFET Power Devices”, University of Warwick, U.K.
- 16:10 – 16:30 B. Lechner and G. Wachutka: “Impact of the Electrical Behavior of EH6/7 Carbon Vacancies on the SRH Carrier Lifetimes in the Epi-layer of a 4H-SiC PiN-Rectifier”, Technical University of Munich, Germany.
- 19:00 - 21:30 **Social dinner (location t.b.d.)**

## Friday, 27 August 2021

### Session No. 4 “Packaging and Integration”

- 9:00 – 9:40 Shiori Idaka (invited): “New Packaging Concepts: Bridging Devices and Applications”, Mitsubishi Electric Corporation, Tokyo, Japan.
- 9:40 – 10:00 S. Clausner, M. Hanf and N. Kaminski: “Parylene as Coating for Power Semiconductor Devices”, University of Bremen, Germany
- 10:00 – 10:20 R. Lerner and N. H. Hansen: “Commercial Sweet Spots for GaN and CMOS Integration by Micro-Transfer Printing”, X-FAB Global Service GmbH, Erfurt, Germany.
- 10:20 – 10:40 **Coffee break**

### Session No. 5 “Integration of Power Devices”

- 10:40 – 11:00 Tianyu Li, Chr. Voigt and A. Lindemann: “A Comparative Analysis of an Embedded to a Conventional Power Section with GaN HEMTs”, University of Magdeburg, Germany.
- 11:00 – 11:20 M. Rahimo, I. Nistor, and D. Green: “Singular Point Source MOS (S-MOS) Cell Concept”, mqSemi AG, Zug, Switzerland, and Silvaco Europe Ltd., Cambridgeshire, U.K.
- 11:20 – 11:40 Hongyang Yan and E. M. Sankara Narayanan: “Scalable Vertical GaN FETs (S-GaN FETs) for Low Voltage Applications”, University of Sheffield, U.K.
- 11:40 – 12:00 C. Herrmann, Xing Liu, and Josef Lutz: “Fast Short Circuit Type I Detection Method based on VGE-Monitoring”, Chemnitz University of Technology, Germany.
- 12:00 – 13:40 **Lunch time**

### Session No. 6 “Measurement and Testing Techniques”

- 13:40 – 14:00 L. Maresca et al.: “Development of an HB-ESD Tester for Power Semiconductor Devices”, University of Naples – Federico II, Napoli, Italy.
- 14:00 – 14:20 D. Helmut et al.: “Measuring Transient  $I/V$  Turn-On Behavior of a Power MOSFET without a Current Sensor”, Technical University of Munich, Germany.
- 14:20 – 14:40 J. Hájek, V. Papež, and M. Horák: “New Method for Si-Wafer Resistivity Determination”, CTU Prague, Czech Republic.
- 14:40 – 15:00 Kamil Kuźniak, Marcin Janicki: “Structure-Aware Compact Thermal Models of Power LEDs”, Łódź University of Technology, Poland.
- 15:00 – 15:15 **Closing of ISPS**