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14:00 15:40 **Großer Saal**

## Novel Device Structures in SiC

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*1 R&D Group, Hitachi, Tokyo, Japan; 2 AIST, Tsukuba, Japan*

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*1 Zhejiang University, Hangzhou, China; 2 ZJU-Hangzhou Global Scientific and Technological Innovation Center, Hangzhou, China*

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*1 Zhejiang University, Hangzhou, China; 2 Guangdong Tianyu Semiconductor Co., China*

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*1 JSAB Technologies, Shenzhen, China; 2 The Hong Kong University of Science and Technology Clear Water Bay, Kowloon, Hong Kong, China*

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*Wolfspeed, Durham, NC, USA*

19:00 21:30 **Rathaus (City Hall) or Die Glocke**

**Welcome Reception**

# TUESDAY, 4 JUNE 2024

08:30 10:10 **Großer Saal**

## Novel GaN Power Devices and Technologies

Chairs: Yasuhiro Uemoto (Infineon Technologies, Japan)
Hiroyuki Handa (Panasonic, Japan)

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*1 Peking University, Beijing, China; 2 Beijing University of Technology, Beijing, China*

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*1 Institute of Microelectronics of the Chinese Academy of Sciences, Beijing, China; 2 University of Chinese Academy of Sciences, Beijing, China*
*3 Shenzhen Pinghu Laboratory, Shenzhen, China; 4 Suzhou Institute of Nano-Tech and Nano-Bionics, Suzhou, China*

10:20 10:50 **Foyer**

**Coffee Break**

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## Ruggedness & Advanced Drive of SiC

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*1 Corporate R&D Center, Toshiba, Kawasaki, Japan; 2 Toshiba Electronic Devices & Storage, Hyogo, Japan*

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**Lunch Break**

14:00 15:00 **Großer Saal**

## $Ga_2O_3$ Devices

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*Efficient Power Conversion, El Segundo, CA, USA*

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*1 Institute of Microelectronics of Chinese Academy of Sciences, Beijing, China; 2 University of Chinese Academy of Sciences, Beijing, China; 3 Anhui University, Hefei, China*

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*1 Peking University, Beijing, China; 2 Beijing University of Technology, Beijing, China*

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*1 Xidian University, Xi'an and Guangzhou, China; 2 University of Macau, Macau, China*

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*The Hong Kong University of Science and Technology, Hong Kong, China*

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*1 Peking University, Beijing, China; 2 Advanced Innovation Center for Integrated Circuits, Beijing, China*

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*1 University of Science and Technology of China, Hefei, China; 2 Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, Suzhou, China*

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*1 Virginia Tech, Blacksburg, VA, USA; 2 NexGen Power Systems, Santa Clara, CA, USA*

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*1 Peking University, Beijing, China; 2 Tsinghua University, Beijing, China; 3 Beijing University of Technology, Beijing, China*

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*1 The Hong Kong University of Science and Technology, Hong Kong, China; 2 University of Science and Technology of China, Hefei, China; 3 Southern University of Science and Technology, Shenzhen, China*

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*1 Shandong University, Jinan, China; 2 Shenzhen Research Institute of Shandong University, Shenzhen, China; 3 EpiTop Optoelectronic, Maanshan, China*

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*1 Southeast University, Nanjing, China; 2 Nanjing Electronic Devices Institute, Nanjing, China*

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*1 Xi'an Jiaotong-Liverpool University, Suzhou, China; 2 University of Liverpool, UK*

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*National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

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*1 Nanjing University, Nanjing, China; 2 China Electronic Product Reliability and Environmental Testing Research Institute, Guangzhou, China*

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*1 University of Electronic Science and Technology of China (UESTC), Chengdu, China; 2 Institute of Electronic and Information Engineering, UESTC, Dongguan, China*

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*1 National Yang Ming Chiao Tung University, Taiwan; 2 Powerchip Semiconductor Manufacturing Corporation, Taiwan*

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*1 University of Electronic Science and Technology of China, Chengdu, China; 2 Institute of Electronic and Information Engineering of UESTC in Guangdong, Dongguan, China; 3 Shenzhen Pinghu Laboratory, Shenzhen, China; 4 China Electronic Product Reliability and Environmental Testing Research Institute, Guangzhou, China*

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*1 University of Waterloo, Waterloo, Canada; 2 Virginia Tech, Blacksburg, VA, USA; 3 The Univeristy of Hong Kong, Hong Kong, China; 4 Texas Instruments, Santa Clara, CA, USA*

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Matthew A. Porter 1, Yunwei Ma 1, Yuan Qin 1, Bernadeta Srijanto 2, Dayrl Briggs 2, Ivan Kravchenko 2, Yuhao Zhang 1
*1 Virginia Tech, Blacksburg, VA, USA; 2 Oak Ridge National Laboratory, Oak Ridge, TN, USA*

# WEDNESDAY, 5 JUNE 2024

08:30 09:30 **Großer Saal**

## Bi-directional Devices

Chairs: Naruhisa Miura (Mitsubishi Electric Corporation, Japan)
Niels Posthuma (IMEC, Belgium)

08:30 08:50 **600 V 4H-SiC Lateral Bi-Directional JBS Diode Integrated MOSFET (L-BiD-JBSFET)** 335
Seung Yup Jang, Stephen A. Mancini, Woongje Sung
*University at Albany, Albany, NY, USA*

08:50 09:10 **Monolithically Integrated >3kV, 20A 4H-SiC BiDFET Utilizing an Accumulation Mode Channel for Improved Output Characteristics** 339
Stephen A. Mancini 1, Seung Yup Jang 1, Andrew Binder 2, Richard Floyd 2, Robert Kaplar 2, Stan Atcitty 2, Adam J. Morgan 3, Woongje Sung 1
*1 University at Albany, Albany, NY, USA; 2 Sandia National Laboratories, Albuquerque, NM, USA; 3 NoMIS Power Corporation, Albany, NY, USA*

09:10 09:30 **A Monolithic Bidirectional GaN/SiC Hybrid Field Effect Transistor** 343
Yingchen Yang, Sirui Feng, Zongjie Zhou, Tao Chen, Zheng Wu, Yangming Du, Yat Hon Ng, Hang Liao, Yumeng Huang, Heng Wang, Zheyang Zheng, Kevin J. Chen
*The Hong Kong University of Science and Technology, Hong Kong, China*

09:40 10:20 **Großer Saal**

## Driver IC Design

Chairs: Weijia Zhang (Analog Devices, Canada)
John Pigott (NXP Semiconductors, USA)

09:40 10:00 **A Quad-Slope Smart Gate Driver with Mixed-Signal Auto-Timing Technique for Power Devices Segment Control** 347
Rongxing Lai 1, Yuxiao Yang 1, Yun Dai 1, Junhong Wu 1, Yue Shi 1, Zekun Zhou 1, Bo Zhang 1, Huayi Li 2, Xingqiang Peng 2
*1 University of Electronic Science and Technology of China, Chengdu, China; 2 Huawei Digital Power Technology, Shenzhen, China*

10:00 10:20 **An Integrated Low Power Enhanced Pull-Up GaN Driver Using SenseHEMT for Reliable and Fast Short-Circuit Protection** 351
Chun-Wang Zhuang 1, Xin Ming 1, 2, 3, Zi-Kai Ye 1, Yao Qin 1, Xin-Ce Gong 1, Yi Lu 1, Si-Chao Li 4, Qi Zhou 1,3, Bo Zhang 1
*1 University of Electronic Science and Technology of China, Chengdu, China; 2 Shenzhen Institute for Advanced Study, UESTC, Shenzhen, China; 3 Institute of Electronic and Information Engineering of UESTC in Guangdong, Dongguan, China; 4 Hubei Jiufengshan Laboratory, Wuhan, China*

10:20 10:50 **Foyer**

## Coffee Break

10:50 12:10 **Großer Saal**

## Low Voltage Power Devices

Chairs: Wesley Chih-Wei Hsu (Nexperia, UK)
Xin Lin (NXP Semiconductors, USA)

10:50 11:10 **Demonstration of Pseudo Independent Driving of Buried Gate in Trench Field Plate MOSFETs** 355
Tatsuya Nishiwaki, Yu Kumabe, Naoya Miyajima, Keiko Kawamura, Kenya Kobayashi
*Toshiba Electronic Devices & Storage Corporation, Kawasaki, Japan*

11:10 11:30 **Improvement of $R_{ON}$-BV trade-Off in Field Plate MOSFETs by Localized Fixed Charges in the Trench Oxide** 359
Taichi Fukuda 1, Yusuke Kobayashi 1, Shotaro Baba 1, Hiro Gangi 1, Hiroki Nemoto 1, Tomoaki Inokuchi 1,
Hirofumi Kawai 2, Tatsuya Nishiwaki 2, Kazuto Takao 1
*1 Corporate R & D, Toshiba Corporation, Kanagawa, Japan; 2 Advanced Semiconductor Device Development Center, Toshiba Electronic Devices & Storage Corporation, Kanagawa, Japan*

11:30 11:50 **A Fully Realised 'Dielectric Field Relief' TrenchMOS Technology** 363
MD Imran Siddiqui 1, Steven T. Peake 1, Wesley Chih-Wei Hsu 1, Hungjin Kim 2, Dnyanesh Havaldar 1, Stephen Gilmartin 1, Ian Culshaw 1
*1 Nexperia UK, Hazel Grove, Manchester, United Kingdom; 2 Nexperia China, Shanghai, China*

11:50 12:10 **Highly Optimized High-Voltage SOI p-LDMOS Beating the Conventional SOI Limit** 367
Saumitra Mehrotra 1, Ronghua Zhu 1, Betsy Cheek 1, Vignesh Subramanian 2, Todd Roggenbauer 3
*1 NXP Semiconductors, Chandler, AZ, USA; 2 NXP Semiconductors, Nijmegen, Netherlands, 3 NXP Semiconductors, Austin, TX, USA*

12:30 14:00 **Foyer**
**Lunch Break**

14:00 16:30 **Kleiner Saal**
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*1 Xi'an Jiaotong-Liverpool University, Suzhou, China; 2 Suzhou Institute of Nano-Tech and Nano-Bionics, Suzhou, Jiangsu, China; 3 University of Liverpool, UK; 4 University of Science and Technology of China, Hefei, China*

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*1 Xi'an Jiaotong-Liverpool University, Suzhou, China; 2 Suzhou Institute of Nano-Tech and Nano-Bionics, Suzhou, Jiangsu, China; 3 University of Science and Technology of China, Hefei, China; 4 University of Liverpool, Liverpool, UK*

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*1 Southern University of Science and Technology, Shenzhen, China; 2 The University of Hong Kong, Hong Kong*

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P. Döring, M. Basler, R. Reiner, S. Mönch, R. Driad, M. Dammann, M. Mikulla, R. Quay
*Fraunhofer Institute for Applied Solid State Physics, Freiburg, Germany*

14:00 16:30 **Kleiner Saal**

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*1 R & D Group Hitachi, Hitachi, Ibaraki, Japan; 2 Design Development Division, Hitachi Power Semiconductor Device, Hitachi, Ibaraki, Japan*

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*1 Fudan University, Shanghai, China; 2 Wuxi China Resources Huajing Microelectronics, Wuxi, China; 3 Wuxi Microelectronics Scientific and Research Center, Wuxi, China; 4 Shanghai Institute of Space Power-Sources, Shanghai, China*

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*1 Infineon Technologies, Neubiberg, Germany; 2 TU Wien, Austria; 3 TU Chemnitz, Germany*

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Tao Wei
*PowerWyse, Shenzhen, China & Santa Clara, CA, USA*

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*1 Fudan University, Shanghai, China; 2 Wuxi China Resources Huajing Microelectronics, Wuxi, China; 3 Shanghai Institute of Space Power-Sources, Shanghai, China*

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*1 Southeast University, Nanjing, China; 2 CSMC Technologies Corporation, Wuxi, China; 3 Sanrise Technologies Corporation, Shenzhen, China*

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*1 Nexperia UK, Hazel Grove, Manchester, United Kingdom; 2 Nexperia Germany, Hamburg, Germany*

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*DB HiTek, Gyeonggi, Republic of Korea*

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*1 Southeast University, Nanjing, China; 2 CSMC Technologies Corporation, Wuxi, China*

**On the Superior Reverse Recovery Properties of Silicon Partial SOI SJ Diodes** **422**
Marina Antoniou 1, Nishad Udugampola 2, Florin Udrea 2, Elizabeth Kho Ching Tee 3, Alexander Hölke 4
*1 University of Warwick, Coventry, UK; 2 University of Cambridge, UK; 3 XFABTechology, Kuching, Sarawak, Malaysia; 4 XFAB Technology, Erfurt, Germany*

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*1 University of Electronic Science and Technology of China, Chengdu, China; 2 CSMC Technologies Corporation, Wuxi, China; 3 Shenzhen Institute of Information Technology, Shenzhen, China*

**Compact SPICE Modeling of Total Ionizing Dose for Shield Gate Trench MOSFET** **430**
Yixun Jiang 1, Qingfeng Kong 1, Ming Qiao 1,2,3, Zuquan Zheng 1, Yuxi Tang 1, Bo Zhang 1
*1 University of Electronic Science and Technology of China, Chengdu, China; 2 Institute of Electronic and Information Engineering of UESTC in Guangdong, Dongguan, China; 3 University of Electronic Science and Technology of China, Shenzhen, China*

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*1 Southeast University, Nanjing, China; 2 CSMC Technologies Corporation, Wuxi, China; 3 University of Electronic Science and Technology of China, Chengdu, China*

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Jiawei Wang 1, Ming Qiao 1,2,3, Dingxiang Ma 1, Yue Gao 1, Bo Zhang 1
*1 University of Electronic Science and Technology of China, Chengdu, China; 2 Institute of Electronic and Information Engineering of UESTC in Guangdong, Dongguan, China; 3 University of Electronic Science and Technology of China, Shenzhen, China*

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*1 University of Electronic Science and Technology of China, Chengdu, China; 2 The 58th Research Institute of China Electronics Technology Group Corporation, Wuxi, China; 3 Institute of Electronic and Information Engineering of UESTC in Guangdong, Dongguan, China; 4 Shenzhen Institute for Advanced Study, UESTC, Shenzhen, China*

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*1 Southeast University, Nanjing, China; 2 CSMC Technologies Corporation, Wuxi, China*

**Field Plate Engineering for Free Metal Routing Over Lateral HV Devices** **450**
Alexander Hölke
*X-FAB Global Services, Erfurt, Germany*

14:00 16:30 **Kleiner Saal**

## Power IC Design (Poster Session)

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*1 Université de Toulouse, France; 2 NXP Semiconductors, Toulouse, France*

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*The University of Texas at Dallas, Richardson, TX, USA*

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*1 National Yang Ming Chiao Tung University, Hsinchu, Taiwan; 2 Hon Hai Research Institute, Hsinchu, Taiwan*

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*1 Southeast University, Nanjing, China; 2 National Key Laboratory of Solid-State Microwave Devices and Circuits, Nanjing, China; 3 Wuxi Chipown Micro-electronics, Wuxi, China*

**A High-Speed Dual-NMOSFETs Output Stage Buffer with Charge-Transferring Bootstrap Circuit for GaN-Based DToF Lidar Application** 470
Yao Qin 1, Xin Ming 1, 2, 3, Zhi-Yi Lin 1, Chun-Wang Zhuang 1, Xin-Ce Gong 1, Qi Zhou 1, 3, Peng Luo 4, Bo Zhang 1
*1 University of Electronic Science and Technology of China, Chengdu, China; 2 Shenzhen Institute for Advanced Study, UESTC, Shenzhen, China; 3 Institute of Electronic and Information Engineering of UESTC in Guangdong, Dongguan, China; 4 Chengdu Danxi Technology, Chengdu, China*

14:00 16:30 **Kleiner Saal**

## Module and Package Technologies (Poster Session)

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Hiroki Takahashi, Keita Suzuki, Akira Kitamura, Tetsuo Endoh, Yoshikazu Takahashi
*Tohoku University, Sendai, Miyagi, Japan*

**Digital Twin-Based Lifetime Estimation of SiC Power Modules** 478
Anu Mathew 1,2, Sven Rzepka 2, Patrick Heimler 1, Dong Xie 1, Mohamed Alaluss 1, Thomas Basler 1
*1 Chemnitz University of Technology, Chemnitz, Germany; 2 Fraunhofer ENAS, Chemnitz, Germany*

**A Novel Degradation Mechanism of SiC Power Devices Under Electro-Chemical Stress** 482
Felix Hoffmann 1, Michael Hanf 2, Stefan Schmitt 1, Nando Kaminski 2
*1 Semikron Danfoss Elektronik, Nuremberg, Germany; 2 University of Bremen, Germany*

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*Hong Kong University of Science and Technology, Hong Kong, China*

**Automotive Application Relevant Failure Mechanisms Under Cyclic Thermomechanical Load** 490
Matthias Hammerl 1, Freerik Forndran 2, Markus Leicht 2, Petra Mönius 2, Sarah Rugen 2, Erik Teuber 2
*1 Vitesco Technologies, Regensburg, Germany; 2 Vitesco Technologies Germany, Nuremberg, Germany*

**The Dynamics in Accelerated Corrosive Gas Tests of Silicone Gel Potted IGBT-Modules Under High Voltage** **494**
Michael Hanf, Nando Kaminski
*University of Bremen, Germany*

**Determination of the Junction Temperature Under Load Current in GaN Power Devices with Schottky Gate Leakage Current as TSEP** **498**
Maximilian Goller 1, Jörg Franke 1, Tobias Lentzsch 1, Josef Lutz 1, Thomas Basler 1, Samir Mouhoubi 2, Gilberto Curatola 2
*1 Chemnitz University of Technology, Chemnitz, Germany; 2 Huawei Nuremberg Research Center, Nuremberg, Germany*

| | | |
|---|---|---|
| 15:00 | 15:30 | **Foyer**<br>**Coffee Break** |
| 17:30 | 18:30 | **Großer Saal**<br>**Concert and Hall of Fame** |
| 19:00 | 23:00 | **Ratskeller**<br>**Conference Dinner** |

# THURSDAY, 6 JUNE 2024

08:30 10:10 **Großer Saal**

## Packaging Technology

Chairs: Ichiro Omura (Kyushu Institute of Technology, Japan)
Stefan Oehling (Semikron-Danfoss, Germany)

08:30 08:50 **First Demonstration of All-SiC Half-Bridge Gate Driver with High-Side Floating Substate Region** — 502

Jie Ma 1, Yong Gu 1, Xiangyu Hou 1, Jingjing Hong 1, Ran Ye 1, Sheng Li 1, Jiaxing Wei 1, Ao Liu 2, Runhua Huang 2, Song Bai 2, Long Zhang 1, Siyang Liu 1, Weifeng Sun 1
*1 Southeast University, Nanjing, China; 2 Nanjing Electronic Devices Institute, Nanjing, China*

08:50 09:10 **Reliability and Failure Mechanisms of Direct Bonded Power Semiconductor Devices in Power Cycling Test** — 506

Marius Köhler 1, Michael Curkin 1, Christian Thomas 1, Nicolas Heuck 1, Jens Müller 2, Kurt-Georg Besendörfer 2
*1 Hamm-Lippstadt University of Applied Sciences, Lippstadt, Germany; 2 Semikron Danfoss Elektronik, Nuremberg, Germany*

09:10 09:30 **Durable Edge Termination Design of SiC SBD Against Humidity** — 510

Kohei Ebihara 1, Hiroki Niwa 1, Takeshi Murakami 2, Katsuhiro Fujiyoshi 2, Yosuke Nakata 2, Shigeru Okimoto 2, Kenji Hatori 2, Kazuyasu Nishikawa 1
*1 Advanced Technology R&D Center, Mitsubishi Electric, Amagasaki, Hyogo, Japan; 2 Power Device Works, Mitsubishi Electric, Fukuoka, Japan*

09:30 09:50 **Novel Approach to Mitigate Parasitic Oscillation of Power Modules with Parallel Connected SiC-MOSFETs** — 514

Shun Takeda 1, Eitaro Miyake 1, Hiroshi Kono 2, Teruyuki Ohashi 3, Tomohiro Iguchi 4, Kazuya Kodani 5
*1 Toshiba Electronic Devices & Storage Corporation, Kanagawa, Japan; 2 Toshiba Electronic Devices & Storage Corporation, Hyogo, Japan; 3 Corporate R&D Center Toshiba Corporation, Kanagawa, Japan; 4 Corporate Manufacturing Engineering Center Toshiba Corporation, Kanagawa, Japan; 5 Infrastructure Systems R&D Center Toshiba Infrastructure Systems & Solutions Corporation, Tokyo, Japan*

09:50 10:10 **Comparative Study on Power Cycling Capabilities of SiC Power MOSFET and Si IGBT Baseplate-Less Power Modules** — 518

Ivana Kovacevic-Badstuebner 1, Elena Mengotti 2, Philipp Natzke 1, Enea Bianda 2, Salvatore Race 1, Matthias Schuepbach 1, Christoph Kenel 2, Denis Musella 2, Joni Jormanainen 3, Ulrike Grossner 1
*1 ETH Zurich , Switzerland; 2 ABB Switzerland Ltd., Corporate Research Center, Baden, Switzerland; 3 ABB Drives Oy, Helsinki, Finland*

10:20 10:50 **Foyer**

**Coffee Break**

10:50 12:30 **Großer Saal**

## GaN Power Device Reliability and Tests

Chairs: Dong Seup Lee (TI, USA)
Na Ren (Zhejiang University, China)

10:50 11:10 **High-Performance GaN HEMTs on Single Crystalline AlN Templates with a 230 nm Ultra-Thin Buffer and $Al_2O_3/SiO_2$ Passivation** 522
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*1 Xidian University, Guangzhou, China; 2 Guangdong Zhineng Technology, Guangzhou, China; 3 Songshan Lake Materials Laboratory, Dongguan, China; 4 Peking University, Beijing, China*

11:10 11:30 **Normally-off Schottky-Gate p-GaN HEMTs with Enhanced Irradiation Hardness** 526
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*1 Nanjing University, Nanjing, China; 2 China Academy of Engineering Physics, Mianyang, China; 3 Zhejiang University, Hangzhou, China; 4 CorEnergy Semiconductor, Suzhou, China*

11:30 11:50 **Suppression of hot-electron-Induced Dynamic $R_{ON}$ Degradation in p-GaN Gate HEMT Using Active Passivation and Virtual Body** 530
Junjie Yang 1, Jingjing Yu 1, Yanlin Wu 1, Jiawei Cui 1, Han Yang 1, Xuelin Yang 1, Meng Zhang 2, Bo Shen 1, Maojun Wang 1, Jin Wei 1
*1 Peking University, Beijing, China; 2 Beijing University of Technology, Beijing, China*

11:50 12:10 **Versatile Dynamic On-Resistance Test Bench for GaN Power Transistors with Considerations for Soft and Hard Switching, Time-Resolved Test, Packaged and On-Wafer Devices** 534
Yunhong Lao 1, Muqin Nuo 1, Qian Zheng 1, Jiawei Cui 1, Junjie Yang 1, Sihang Liu 1, Bo Shen 1, Meng Zhang 2, Maojun Wang 1, Jin Wei 1
*1 Peking University, Beijing, China; 2 Beijing University of Technology, Beijing, China*

12:10 12:30 **Comprehensive Study of Human-Body-Model Electrostatic Discharge on p-GaN Gate Power HEMT with AlGaN Barrier Spacers** 538
Po-Yen Huang, Xue-Han Chen, Haoran Wang, Shawn S. H. Hsu, Roy K.-Y. Wong
*National Tsing-Hua University, Hsinchu, Taiwan*

12:30 14:00 **Foyer**

**Lunch Break**

14:00 15:40 **Großer Saal**

## Si High Voltage Devices

Chairs: Umamaheswara Vemulapati (Hitachi Energy, Switzerland)
Wentao Yang (Huawei, China)

14:00 14:20 **A Novel MOS Controllable Stored-Carrier Diode (MOSD) for an Innovative Silicon Power Device (i-Si)** 542
Tomoyuki Miyoshi 1, Hiroshi Suzuki 1, Takashi Hirao 1, Yusuke Takada 1, Tomoyasu Furukawa 1, Tsubasa Moritsuka 2, Masaki Shiraishi 2, Yusuke Kanno 3, Yasuhiko Kouno 3, Katsumi Ishikawa 3, Mutsuhiro Mori 3
*1 R&D Group, Hitachi, Ibaraki, Japan; 2 Hitachi Power Semiconductor Device, Hitachi, Ibaraki, Japan; 3 Railway System Business Unit, Hitachi, Hitachinaka, Ibaraki, Japan*

14:20 14:40 **Bi-Directional Operation and Active $E_{rr}$ Reduction of 2nd Generation Back-gate-Controlled IGBTs (BC-IGBTs)** **546**
T. Saraya 1, M. Fukui 1, Y. Kobayashi 2, K. Itou 1, T. Takakura 1, S. Suzuki 1, R. Gejo 3, T. Sakano 2, T. Inokuchi 2, T. Matsudai 3, K. Takao 2, T. Hiramoto 1
*1 The University of Tokyo, Tokyo, Japan; 2 Corporate R&D Center, Toshiba Corporation, Kanagawa, Japan; 3 Toshiba Electronic Devices & Storage Corporation, Kanagawa, Japan*

14:40 15:00 **Elucidation of New Turn-on Voltage Tail Phenomenon of IGBT and Improvement by Dynamic-CSL Structure** **550**
Ryota Kuroda, Katumi Eikyu, Sho Nakanishi, Hitoshi Matsuura
*Renesas Electronics, Hitachinaka, Ibaraki, Japan*

15:00 15:20 **Experimental and Theoretical Study on Failure Mechanism of Superjunction MOSFET Under H3TRB Testing** **554**
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*1 University of Electronic Science and Technology of China, Chengdu, China; 2 China Resources Microelectronics, Wuxi, Jiangsu, China; 3 Guangdong Institute of Electronic Information Engineering, University of Electronic Science and Technology of China, Dongguan, Guangdong, China*

15:20 15:40 **Dynamic Charge Imbalance in Superjunction IGBTs: Design, Simulation, and Experimental Validatiion** **558**
Tomohiro Tamaki 1, Atsufumi Inoue 1, Masayuki Furuhashi 1, Shiro Hino 1, Makoto Hashimoto 2, Mitsuhisa Kawase 2, Yohei Sudo 2, Tsutomu Ogawa 2, Kazuyasu Nishikawa 1
*1 Advanced Technology R&D Center, Mitsubishi Electric Corporation, Amagasaki, Hyogo, Japan; 2 Nisshinbo Micro Devices, Japan*

15:40 16:10 **Großer Saal**

**Closing Session**

**Charitat Young Researcher Award and Best Poster Award**
Nando Kaminski, General Chair
Ulrike Grossner, Technical Program Chair

**Closing Remarks**
Nando Kaminski, General Chair

**ISPSD 2025 Announcement**
Ichiro Omura, General Chair ISPSD 2025 (Kyushu Institute of Technology, Japan)