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¹X-FAB Sarawak Sdn. Bhd., Malaysia; ²University of Warwick; ³Silvaco Europe Ltd.; ⁴X-FAB Global Services GmbH;

⁵University of Cambridge

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Junji Cheng^{1,3}, Tao Zhong¹, Bo Yi¹, Haimeng Huang¹, Keqiang Ma², Xinkai Guo¹, Hongqiang Yang¹, Zhiming Wang¹, Guoyi Zhang³

¹University of Electronic Science and Technology of China; ²Chengdu Semi-Future Technology Co., Ltd.;

³Peking University

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Chairs: Alberto Castellazzi, Kyoto University of Advanced Scienc

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Tetsuya Nitta¹, Tatsuro Watahiki¹, Keunsam Lee²

¹Mitsubishi Electric Corporation; ²Nihon Synopsys G.K.

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ROHM Co., Ltd.

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Felix Hoffmann¹, Stefan Schmitt², Nando Kaminski¹

¹University of Bremen; ²SEMIKRON Elektronik GmbH & Co. KG

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Haiyong Wan¹, Marina Antoniou¹, Nikolaos Iosifidis¹, Rui Rong², Philip Mawby¹

¹University of Warwick; ²MacMic Science & Technology Co., Ltd

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Tim Boettcher¹, Guerkan Ilcali¹, Tom Birkben¹, Haibo Fan², Max Haenze¹, Alex Sabelfeld¹, Soenke Kahl¹

¹Nexperia Germany GmbH; ²Nexperia Hong Kong

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Ciro Scognamillo¹, Antonio Pio Catalano¹, Enzo d'Alessandro¹, Hamzeh J. Jaber², Alberto Castellazzi²

¹Università degli Studi di Napoli Federico II; ²Kyoto University of Advanced Science

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A.P. Catalano¹, C. Scognamillo¹, V. d'Alessandro¹, L. Codecasa²

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Fu-Jen Hsu^{1,2}, Hsiang-Ting Hung², Cheng-Tyng Yen²

¹*National Tsing Hua University*; ²*Fast SiC Semiconductor Inc.*

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¹*Anhui University*; ²*Wuhan University*

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¹*APS Laboratory, ETH Zürich*; ²*Infineon Technologies AG*; ³*University of L'Aquila*

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¹*Università degli Studi di Napoli Federico II*; ²*Università Ca' Foscari Venezia*

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¹*University of Electronic Science and Technology of China*; ²*Xi'an Modern Control Technology Research Institute*;

³*The Fifth Electronic Research Institute of MIIT*

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Li Liu¹, Jue Wang², Zishi Wang¹, Miaoguang Bai¹, Junze Li¹, Zhengyun Zhu¹, Hongyi Xu³, Na Ren¹, Qing Guo¹, Kuang Sheng¹

¹*Zhejiang University*; ²*Hangzhou City University*; ³*ZJU-Hangzhou Global Scientific and Technological Innovation Center*

Thursday, June 1, 2023

8:45 – 10:25

GaN-3: Novel GaN Power Devices & Technologies 2

Chairs: Hong Zhou, *Xidian University*
Hideyuki Okita, *Panasonic*

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3.0-V-Threshold-Voltage p-GaN HEMTs with Low-Loss Reverse Conduction Capability 370

Feng Zhou¹, Weizong Xu¹, Yulei Jin¹, Tianyang Zhou¹, Fangfang Ren¹, Dong Zhou¹, Yuanyang Xia², Leke Wu², Yiheng Li², Tinggang Zhu², Dunjun Chen¹, Rong Zhang¹, Youdou Zheng¹, Hai Lu¹

¹*Nanjing University*; ²*CorEnergy Semiconductor Co. Ltd.*

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High Dynamic Stability in Enhancement-Mode Active-Passivation p-GaN Gate HEMT 378

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¹*Peking University*; ²*The Hong Kong University of Science and Technology*; ³*Southern University of Science and Technology*

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- Impact of Gate Morphology on Electrical Performances of Recessed GaN-On Si MOS Channel-HEMT for Different Channel Orientations 382**
C. Piotrowicz^{1,2}, B. Mohamad¹, P. Fernandes Paes Pinto Rocha², N. Malbert², S. Ruel¹, P. Pimenta-Barros¹, M.-A. Jaud¹, L. Vauche¹, C. Le Royer¹
¹CEA-Leti; ²UMR 5218 - IMS - Laboratoire de l'Intégration du Matériau au Système

10:45 – 12:00

- SiC-3: Recent Advances in Ga₂O₃ Devices**
Chairs: Cheng-Tyng Yen, *Fast SiC Semiconductor Inc.*
Alexander Bolotnikov, *ON Semiconductor*

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- NiO Junction Termination Extension for Ga₂O₃ Devices: High Blocking Field, Low Capacitance, and Fast Switching Speed 386**
Ming Xiao¹, Boyan Wang¹, Ruizhe Zhang¹, Qihao Song¹, Joseph Spencer^{1,2}, Zhonghao Du³, Yuan Qin¹, Kohei Sasaki⁴, Han Wang³, Marko Tadje², Yuhao Zhang¹
¹Virginia Polytechnic Institute and State University; ²U.S. Naval Research Laboratory;
³University of Southern California; ⁴Novel Crystal Technology, Inc.

11:10

- An E-Mode β-Ga₂O₃ Metal-Heterojunction Composite Field Effect Transistor with a Record High P-FOM of 0.73 GW/cm² 390**
Xichen Wang, Xiaoli Lu, Yunlong He, Peng Liu, Yv Shao, Jianing Li, Yitong Yang, Yuan Li, Yue Hao, Xiaohua Ma
Xidian University

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- 1 kV Vertical β-Ga₂O₃ Heterojunction Barrier Schottky Diode with Hybrid Unipolar and Bipolar Operation 394**
Weibing Hao, Qiming He, Zhao Han, Xiaolong Zhao, Guangwei Xu, Shu Yang, Shbing Long
University of Science and Technology of China

13:45 – 15:00

- LVT-2: Lateral Low Voltage Devices**
Chairs: Xin Lin, *NXP Semiconductors*
Riccardo Depetro, *STMicroelectronics*

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- Compact 200V Diode Constructed on Thick SOI Wafer 398**
Jaroslav Pjencak, Ladislav Seliga
ON Semiconductor Corporation, Czechia

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- A 600V HVIC with Integrated Bootstrap Diode Function by a New Emulating HVMOS 402**
Yuji Kawasaki¹, Toshihiro Imasaka¹, Yuto Shibuta², Shohei Sano², Yo Habu¹, Nobuo Hashimoto², Mitsutaka Hano¹, Manabu Yoshino¹
¹Mitsubishi Electric Corporation; ²Melco Semiconductor Engineering Corporation

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- Experimental Study on SOI LIGBT with Field Plate Resistances at Anode Side 406**
Jie Wei¹, Pengchen Zhu¹, Yuxi Wei¹, Kemeng Yang³, Jie Li¹, Junnan Wang¹, Kaiwei Dai¹, Hua Song², Sen Zhang², Wentong Zhang¹, Bo Zhang¹, Xiaorong Luo¹
¹University of Electronic Science and Technology of China; ²CSMC Technologies Corporation;
³Nanjing University of Posts and Telecommunications