

The 35th International
Symposium on Power
Semiconductor Devices
and ICs

ISPSD 2023

May 28 ~ June 1, 2023
Hong Kong, China



ISPSD is the premier forum for technical discussions in all areas of power semiconductor devices and power integrated circuits. ISPSD 2023 will be held in the city of Hong Kong, one of the most cosmopolitan, diverse, dynamic, and vibrant cities in Asia.

Topics of interest include but are not limited to:

High Voltage Power Devices: High voltage silicon based discrete devices (> 200 V) such as super junction MOSFETs, IGBTs, thyristors, GTOs and pn-diodes

Low Voltage Power Devices and Power IC Technology: Low voltage silicon based discrete power devices (≤ 200 V) and power devices for power ICs of all voltage ranges

Power IC Design: Circuit design and demonstration using power IC technology platform

GaN and Compound Materials: GaN and compound semiconductor materials (e.g. AlN, GaAs) based power devices, technology and integration, materials, and processing

SiC and Other Materials: SiC and other materials (e.g. Ga_2O_3 , diamond) based power devices that can sustain higher voltage, technology and integration, materials, and processing

Module and Packaging Technologies: Module and package technology for discrete power devices and power ICs

Submission requirement:

Abstract submission deadline:

December 12, 2022

Author notification:

February 6, 2023

Late news submission (limited acceptance):

March 10, 2023

Final manuscript submission deadline:

March 24, 2023

A PDF abstract should be submitted through the website including a single-page text summary in English and up to two additional pages of supporting figures.

<https://ispsd2023.com/>

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ISPSD 2023 CATEGORIES (TRACKS) AND PAPER TOPIC EXAMPLES

High Voltage Power Devices (HV)

High voltage silicon-based discrete devices ($>200\text{V}$), including:

- IGBTs, thyristors, GTOs and PiN diodes
- Super-junction MOSFETs and new unipolar devices
- High voltage power device failure mechanisms
- Wafer technology and lifetime control
- New gate drive methods to enhance IGBT and super-junction MOSFET performance
- Safe operating area and current filament effects in IGBT
- New edge termination
- Related simulation or measurement technologies

SiC and Other Materials (SiC)

SiC and other materials-based power devices technology and integration, including:

- SiC power MOSFETs, IGBTs, SITs, device and process development
- SiC power IC technology
- Diamond power devices
- Gallium oxide power devices
- Special applications for SiC and other material devices
- New process technologies for SiC and other materials-based devices
- Related simulation or measurement technologies

Low Voltage Power Devices and Power IC Technologies (LVT)

Low voltage silicon-based discrete devices ($\leq 200\text{V}$) and power IC technologies for all voltage ranges, including:

- High performance power MOSFETs for DC-DC converters
- LIGBTs, LDMOS for 600V power ICs
- SOI power devices for power ICs
- Power device design on BCD technology
- MOSFET structures for level shifters
- Process integration for low voltage power devices
- Safe operating area of LDMOSFETs
- Related simulation or measurement technologies

LVT category covers device design, ideas and physics, etc.

GaN and Compound Materials (GaN)

GaN and nitride-based power device technology and integration, including:

- Lateral heterojunction devices
- Vertical GaN transistors and diodes
- AlN-based power devices
- Special circuits and application for GaN and nitride-based power devices
- GaN and nitride-based power IC technology
- Reliability physics and failure analysis of GaN-based power devices
- New process integration for GaN power IC
- Related simulation or measurement technologies

Power IC Design (ICD)

Circuit design and demonstration using power IC technology platform, including:

- Gate driver IC design including WBG power device applications
- Circuit design for SiC and GaN-based ICs
- New circuit and layout design to enhance power IC performance
- Single chip inverters and converters
- New signal isolation technologies on power IC such as magnetic coupling
- Power SoC and passive component integration on a chip
- ESD protection circuits
- Compact circuit models for power IC design
- New type of hybrid power ICs
- Modeling, design platform and measurement technologies for power ICs

ICD category covers power IC circuit design, system integration and IC architecture, etc.

Module and Packaging Technologies (PK)

Module and package technologies for discrete power devices and power ICs, including:

- Power modules, transfer molded package demonstration
- Power module design including wire frame
- Chip current and temperature measurements
- Pressure contact packages for high power system applications
- Thermal management and new cooling technologies
- Stress and strain simulation for package structures and materials
- 3D-package and stray inductance management
- Package design against noise and switching losses
- Reliability physics and failure analysis related to package design and materials
- Package insulation technologies and materials, high temperature endurance
- Power system-in-package hardware design

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