

ISPSD 2022

May 22-26, 2022 Vancouver, Canada

The 34th International Symposium on Power Semiconductor Devices and ICs

SECOND CALL FOR PAPERS

www.ispsd2022.com

ISPSD is the premier forum for technical discussions in all areas of power semiconductor devices and power integrated circuits, including but not limited to device physics, modeling, design, fabrication, materials, packaging and integration, device reliability, and device/circuit interactions.

ISPSD 2022 will be held in Vancouver at the waterfront Marriott Pinnacle Downtown Hotel. Vancouver is a top North American destination and one of the world's most multicultural cities.

TOPICS OF INTEREST INCLUDE:

High Voltage Power Devices: High voltage silicon based discrete devices (>200V) 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 ($\leq 200V$) 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 materials (e.g. AlN, Ga₂O₃, GaAs) based power devices, technology and integration, materials, and processing

SiC and Other Materials: SiC and other material (e.g. Ga₂O₃, diamond) based power devices, technology and integration, materials, and processing

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

ABSTRACT SUBMISSION

Prospective authors should visit the ISPSD2022 website: <https://www.ispsd2022.com>

A PDF abstract should be submitted through this website including a single page text summary in English (500 words maximum) and up to two additional pages of supporting figures.

Abstract Submission Deadline	December 10, 2021
Author Notification	February 4, 2022
Late News Submission Deadline	March 11, 2022
Final Manuscript Submission Deadline	March 25, 2022

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ISPSD2022 is sponsored by the IEEE Electron Device Society (EDS) and technically co-sponsored by the IEEE Power Electronics Society (PELS), the Institute of Electrical Engineers of Japan (IEEJ) and IEEE Industry Applications Society.



ISPSD 2022 CATEGORIES (TRACKS) AND PAPER TOPIC EXAMPLES

High voltage devices (HV)

High voltage silicon based discrete devices (>200V), including:

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

Low voltage devices and power IC device technology (LVT)

Low voltage silicon based discrete power device ($\leq 200V$) and power IC technologies for all voltage ranges, including:

- High performance power MOSFET for DC-DC converters
- LIGBT, LDMOS for 600V power ICs
- SOI power devices for power ICs
- Power device design on BCD technology
- MOSFET structure for level shifter
- Process integration for low voltage power devices
- SOA of LDMOSFET
- Related simulation or measurement technology

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

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 IC
- New circuit and layout design enhancing power IC performance
- Single chip inverters and converters
- New signal isolation technology on power IC such as magnetic coupling
- Power SoC and passive component integration on a chip
- ESD protection circuits
- Compact circuit model for power IC design
- New type of hybrid power ICs
- Modeling, design platform and measurement technology for power IC

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

SiC and other materials: Device and Technology (SiC)

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

- SiC power MOSFET, IGBT, SIT, device and process development
- SiC power IC technology
- Diamond power devices
- Gallium oxide power devices
- Special application for SiC and other material devices
- New process technology for SiC and other material based devices
- Related simulation or measurement technology

GaN and compound materials: Device and Technology (GaN)

GaN and nitride based power devices 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 technology

Module and Package and Integration (PK)

Module and Package technology for discrete power devices and power ICs, including:

- Power modules, transfer molded package demonstration
- Power module design including wire frame
- Chip current and temperature measurement
- Pressure contact packages for high power system applications
- Thermal management and new cooling technology
- 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 material
- Package insulation technology and material, high temperature endurance
- Power system in package hardware design
- Related simulation or measurement technology