

The 37th International Symposium on Power Semiconductor Devices and ICs

ISPSD 2025

Kumamoto, Japan. June 1-5, 2025

ISPSD is the premier forum for technical discussions in all areas of power semiconductor devices and power integrated circuits. ISPSD2025 will be held in Kumamoto city which is located in the heart of Kyushu Island. Kumamoto has a rich historical significance and, recently, has gained attention in the semiconductor industry including power semiconductor.

MAIN CATEGORIES OF INTEREST INCLUDE:

- **High Voltage Devices**
High voltage silicon based discrete devices ($> 200V$) such as SJ-MOSFETs, IGBTs, thyristors and pn-diodes
- **Low Voltage Devices and Power IC Device Technology**
Low voltage silicon based discrete power devices ($\leq 200V$) and devices for power ICs of all voltage ranges
- **Power IC Design**
Circuit design and demonstration using power IC technology platform
- **GaN and Nitride-based Compound Materials: Device and Technology**
GaN and compound semiconductor (e.g., AlN) based power devices, technology and integration
- **SiC and Other Materials: Device and Technology**
SiC and other materials (e.g., Ga_2O_3 , diamond) based power devices, technology and integration
- **Module and Packaging Technologies: System Integration in Package**
Module and package technology for discrete power devices and power ICs.

IMPORTANT DATES

February 7, 2025, 4-page full paper submission deadline

March 24, 2025, Author notification

April 7, 2025, Final submission deadline for final paper and copyright filing

PAPER SUBMISSION <https://www.ispsd2025.com/submit.html>

IMPORTANT: ISPSD2025 has changed the paper submission process.

Note that 4-page full paper submission is required.

Traditional "Abstract Submission" will NOT be accepted.

No late news session.



General Chair: Prof. Ichiro Omura, Kyushu Institute of Technology
Technical Program Chair: Dr. Yuichi Onozawa, Fuji Electric Co., Ltd.

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PAPER SPECIFICATIONS

You MUST use our template to meet formatting requirements below.

<https://epapers2.org/ispsd2025/ESR/samples.php>

- Paper Length: Maximum 4 pages, including figures, tables & references
- Paper Size: A4 (210mm x 297mm)
- File Format: Adobe PDF (.pdf)
- Allowed File Size: 5 MB
- Do NOT apply security settings to your PDF file.



NOTES ON SUBMISSION

- The category of submitted papers may be changed at the discretion of the TPC Chair.
- Deviations from the above paper specifications could impede the review of your paper and result in rejection.
- The submitted papers will be sent for plagiarism checking to the IEEE Crosscheck system and similarity values will be a factor in determining acceptance or rejection.

PAPER AWARDS

• THE OHMI BEST PAPER AWARD

It is awarded to the authors of the paper judged to be the best overall.

• THE CHARITAT AWARD

It is given to the young researcher (under 30 at the time of the conference) who is both the first author and presenter of the paper judged to be the best overall among all eligible papers.

• THE BEST POSTER AWARD

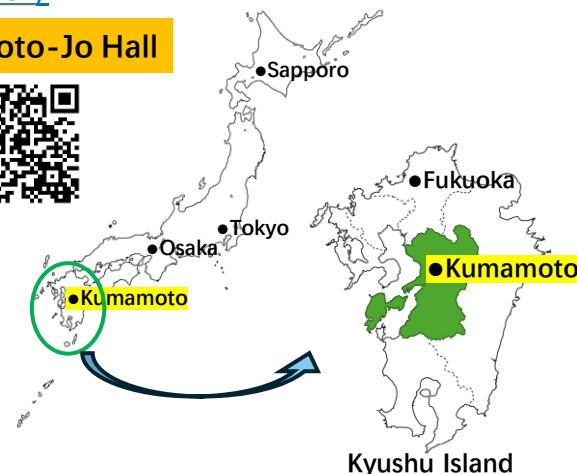
It is awarded to the authors of the paper judged to be the best overall posters.

CONFERENCE VENUE

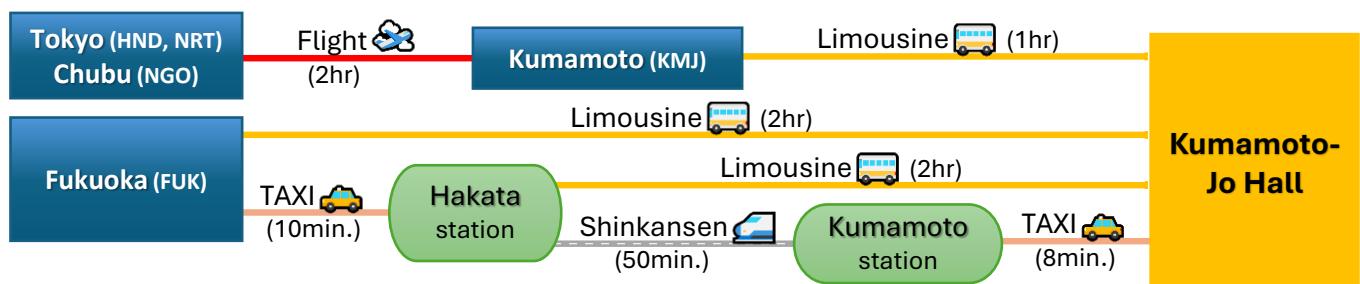
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ISPSD 2025 CATEGORIES AND PAPER TOPIC EXAMPLES

1. High Voltage Devices (HV)

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

- IGBTs, thyristors, GTOs and PiN diodes
- Superjunction MOSFET and new unipolar devices
- New edge termination
- High voltage power device failure mechanisms
- Safe operating area and current filament effect in IGBT
- Wafer technology and lifetime control
- New gate drive method to enhance IGBT and Superjunction MOSFET performance
- Simulation or measurement technology related to this category

2. Low Voltage Devices and Power IC Device Technology (LVT)

Low voltage silicon based discrete power devices ($\leq 200V$) and devices for power ICs 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
- Device isolation technology
- MOSFET structure for level shifters
- Process integration for low voltage power devices
- Safe operating area of LDMOSFETs
- Simulation or measurement technology related to this category

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

3. Power IC Design (ICD)

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

- Gate drive circuit design including WBG power device applications
- Circuit design for SiC and GaN-based ICs
- 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 circuit
- Compact circuit model for power IC design
- New type of hybrid power ICs
- Modeling, design platform and measurement technology for power IC

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

4. GaN and Nitride-Based Compound Materials: Device and Technology (GaN)

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

- Lateral hetero-junction devices
- Vertical GaN transistors and diodes
- AlN-based power devices
- Special circuits and applications 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 technologies for GaN and nitride-based devices
- Special applications for GaN and nitride-based devices
- Simulation or measurement technology related to this category

5. SiC and Other Materials: Device and Technology (SiC)

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

- SiC power MOSFETs, IGBTs, SITs, JFETs, SBDs, and PiN diodes
- SiC power IC technology
- Diamond power devices
- Gallium and Germanium oxide power devices
- Reliability physics and failure analysis of SiC and other material devices
- New process technologies for SiC and other material-based devices
- Special applications for SiC and other material devices
- Simulation or measurement technology related to this category

6. Module and Packaging Technologies: System Integration in Package (PK)

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

- Power module, 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 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 materials
- Package insulation technology and materials, high temperature endurance
- Power System-In-Package hardware design
- Simulation or measurement technology related to this category

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