



72nd
International
Electron
Devices
Meeting

Devices at the Heart of the Intelligence Revolution

2026 International
Electron Devices
Meeting

December 12-16, 2026

Hilton San Francisco Union Square
San Francisco, CA

Call for Papers

Submission deadline: July 16th

Single submission of final, four-page paper

Topics (Alphabetical order)

- Advanced logic technology platform and applications
- Advanced memory technologies
- Advanced packaging, chiplets, and package-device interactions
- Advanced power devices, modules, integration, and systems
- AI, including Deep Learning and new compute paradigms
- Devices/circuits/system interaction
- Devices for RF, 5G/6G, THz and mm-wave
- Device simulation and modeling for emerging technologies
- Implantable and wearable devices
- In-memory computing
- Neuromorphic computing and AI accelerators
- Non-charge-based materials, devices and systems
- Novel materials, increased sustainability, and innovative applications for next generation devices
- Optoelectronics, displays and imaging systems
- Quantum computing and sensing devices
- Reliability and security of electronic devices/circuits/systems
- Sensors, MEMS and bioelectronics
- Silicon Photonics

Meeting Highlights

- Three plenary presentations by prominent experts.
- Special focus sessions covering topics in:
 - Emerging Neural Interface Technologies for Human Interface
 - AI Memory: Technology and Architecture
- Evening Panel Discussion
- Six tutorial sessions on Saturday, December 12th
- Two short courses on Sunday, December 13th
- Exhibits on December 14th – 16th



For More Information

IEDM Online: ieee-iedm.org

Social Networks: ieee-iedm.org/social-media



Papers in the Following Areas Are Requested

ADVANCED LOGIC TECHNOLOGY (ALT): Papers are solicited in the areas of CMOS platform technologies and applications (e.g., HPC, LOP, mobile, automotive, low-temperature CMOS, etc.), logic devices and circuits, process integration schemes for advanced nodes, innovations in materials, process, and metrology techniques, design technology co-optimization (DTCO) and system technology co-optimization (STCO), especially to meet demands in the AI era. Platform technologies include state-of-the-art Si and beyond-Si channel devices, gate-all-around devices, stacked devices with different polarity transistors, advanced interconnect, novel power distribution integration schemes, heterogeneous 2.5D/3D integration schemes, and BEOL-compatible transistors. Device architecture, device design and analysis, process integration, module advancements in process and patterning, metrology, physical layout effects, techniques for reduced variability, yield, thermal management, methodologies, and solutions for DTCO/STCO in the solicited areas are of high interest.

EMERGING DEVICE and COMPUTE TECHNOLOGY (EDT): Papers are solicited on emerging nano-electronic devices and physics. This includes devices based on novel transport and control mechanisms such as tunnel FET, negative capacitance FET, cold-source FET, cryogenic devices, topological materials and devices, phase transitions, ferroelectrics and quantum effects. Devices based on low-dimensional systems including 2D materials, CNTs, nanowires, single electron transistors and quantum dots are welcomed. Exploratory devices with novel device functions and/or novel materials for neuromorphic compute, approximate, probabilistic and analog compute, and non-charge-based compute such as spintronics are key topics. Furthermore, emerging state machines and time dynamical compute systems are also of interest. Qubit devices as well as devices and systems designed to enable quantum computing, quantum simulation and quantum annealing are of high interest. Papers in EDT focus primarily on device physics and novel elaboration concepts.

MEMORY TECHNOLOGY (MT): Papers are solicited across various domains in memory and storage technologies. This encompasses advancements and scaling in established technologies like SRAM, DRAM, and Flash, as well as breakthroughs in emerging innovations such as MRAM, PCM, FRAM, RRAM, ECM, SOM Cross-Point memory, organic memory, and NEMS-based memory. These include research pertaining to materials and devices for memory and selector in electrostatic and atomistic switching mechanisms, as well as the design and implementation of memory cells and arrays in 3D constructs, including stacking and tiering, alongside read/write access mechanisms. Additionally, submissions of novel approaches to homogenous or heterogenous integration and manufacturing techniques of memory in semiconductor fabrication or packaging assembly are welcome. Papers not mainly focused on improvements of memory FoMs but are disclosing novel computing architecture or algorithms such as CiM may be transferred to other technical sections such as EDT or NC at the discretion of the committee.

MODELING and SIMULATION (MS): Papers are solicited on theoretical or computational studies of electronic devices, including logic, memory, optical components, interconnects, power related devices, display, sensors, MEMS, and bioelectronics. The approaches used in the study may include analytical, numerical, statistical, and machine-learning/AI-based methods applied to structures ranging from atomistic to device dimensions, and up to full-chip dimensions, including physics-based compact modeling. Central to submissions is the innovation of devices, whether through predictive insight into novel device concepts, predictive analysis demonstrating significant device improvements, breakthroughs in theoretical understanding of device operation, advancements in knowledge of device processing facilitating enhanced device performance, novel insights into variability, reliability, and yield issues, or breakthroughs in device optimization based on DTCO and STCO. Topics also include ab-initio/atomistic materials modeling, neuromorphic computing modeling, quantum computing and quantum-resilient hardware modeling, spintronics, low-dimensional devices, ferroelectrics, thermal modeling, optoelectronics, displays and imaging systems modeling, power devices, millimeter-wave and analog technologies, 3D/heterogeneous integration and advanced packaging modeling, electro-chemical/mechanical devices, bio-nano sensors for brain-computer interfaces and innovation in compact modeling. Encouragement is given for comparison with experimental data, model calibration, and utilization of multi-scale simulation chains.

NEUROMORPHIC & NOVEL COMPUTING (NC): Papers are solicited on advancements in semiconductor memory and logic devices, as well as the circuits and algorithms that leverage them, for new and unconventional compute paradigms. Specific areas of interest span neuromorphic computing and advanced artificial intelligence (AI) acceleration techniques, broadly encompassing analog/mixed-signal computing, compute-in-memory (CIM) devices and circuits for advanced AI workloads, probabilistic computing, and bio-inspired computing such as spiking neural networks, reservoir computing, combinatorial optimization, and content-addressable memory. Use cases across the compute continuum—from the datacenter to the edge (e.g., in-sensor computing)—are highly contemplated. Submissions demonstrating novel device concepts that fundamentally improve computational efficiency, full hardware integration, explicit device-algorithm co-optimization to mitigate non-ideal device properties, and real-world applications are of highest interest. Papers focusing primarily on near-memory computing may be transferred to the MT subcommittee, while papers centered on optical or quantum computing may be transferred to EDT, at the discretion of the committee.

OPTOELECTRONICS, DISPLAYS, and IMAGERS (ODI): Papers are solicited on optoelectronics, displays, and imaging systems. This includes novel devices, structures, and integration for image sensors, displays, light sources, photonic devices, and high-speed photodetectors and modulators. New technologies on heterogeneous integration of optoelectronics devices as well as on photonic-electronic integration for optical interconnects, on-chip networks and sensing are welcomed. Papers on quantum photonics, neuromorphic photonics, and plasmonics for quantum computation, sensing and encryption are also of interest. Furthermore, ODI includes CMOS imagers, high-speed and high-time resolution imagers, tacked imagers sensors, single-photon sensitivity, Time-Of-Flight and non-visible image sensors. In addition, papers on displays of all types, for augmented or virtual reality, holography, TFTs for photonics applications, flexible, stretchable, and/or printed electronics, in-display sensors are encouraged. Papers on displays or light emitting devices with novel materials such as perovskites or quantum dots are also of interest.

POWER, MILLIMETER WAVE and ANALOG TECHNOLOGY (PMA): Contributions are sought on novel circuit topologies, manufacturing processes, supporting modeling (TCAD and compact models), device physics, reliability, and materials (Si, III-Vs, SiC, (Al)GaN, Ga₂O₃, AlScN, LiNbO₃, diamond, LTO, BN, etc.) along with fundamental studies on doping, deep-level traps, interface states, and device reliability for power switching and high frequency devices. Papers are solicited on discrete and integrated power and high frequency (micro, mm-wave and THz) devices and physics, modules and systems. Topics of interest include devices (diodes, BJTs, FETs, super-junction devices, heterostructures, IGBTs, HEMTs, HBTs, light-triggered structures for galvanic isolation and faster switching, bi-directional switches, vertical geometry devices, and device/package/circuit interactions, including thermal management. A wide variety of applications are also within the scope of PMA: power conversion, supply, regulation and conditioning for computers and data centers, motor drives, transportation, solar, wind, smart grid applications, wireless power harvesting/transfer, beam formers, power amplifiers, tunable passives, antenna arrays.

RELIABILITY of SYSTEMS & DEVICES (RSD): Papers are solicited that focus on component-level FEOL/MOL/BEOL characterization and reliability modeling, reliability evaluation, both experimental and modeling, of devices dedicated to analog, logic, and memory applications, interconnects, circuits, and systems. In addition to Si-based technologies, authors are encouraged to submit their recent achievements made employing other material systems, such as SiGe, IGZO, ferroelectric materials, 2D materials, etc. The reliability topics include, for FEOL, transistor degradation due to hot carriers, bias temperature instabilities, random telegraph noise, dielectric SILC and breakdown as well as modeling the aging and wearout behavior. For MOL/BEOL, topics include the breakdown of MOL spacers and BEOL dielectrics, electromigration, and stress migration failures of contacts and interconnects. For product, system, and circuit reliability, topics include latch-up, ESD, soft error mechanisms, variability-aware design, and design for reliability, robustness, and security of electronic circuits and systems. Of particular interest are investigations of degradation mechanisms for devices, circuits, and systems in the following areas: conventional and emerging memories; beyond CMOS devices; 3D IC package reliability; more-than-Moore applications; biomedical devices and systems; automotive and aerospace.

SENSORS, MEMS, and BIOELECTRONICS (SMB): Papers are solicited in the areas of sensors, MEMS/NEMS, microfluidics and lab-on-chip, BioMEMS, and bioelectronic devices and systems, with emphasis on new device concepts, integrated CMOS implementations, embedded intelligence, and multifunctional microsystems for applications in health, communication, mobility, energy, defense, and extreme environments. Sensors include chemical, biological, acoustic, electrical, electrochemical, magnetic, and mechanical modalities. Topics of interest include physical and biochemical sensors, actuators, resonators, inertial microsystems, RF MEMS, SAW/BAW and acoustic devices, optomechanical devices, energy-harvesting and micro-power devices, and microsystems that integrate sensing, actuation, readout, control, and packaging. Bioelectronics covers hybrid organic/inorganic devices, point-of-care and implantable systems, neural and bioelectronic interfaces, flexible and soft devices, multimodal biomedical sensing, and nanosensors for brain-computer interfaces.

Preparation of Full Papers

Papers must be submitted electronically in IEEE Xplore-compatible pdf format. The deadline for submission of papers is **July 16th, 2026**. PRIOR to preparing your paper for electronic submission, please read the paper preparation and submission guidelines below. A paper template and sample paper are available at: <https://www.ieee-iedm.org/paper-preparation>

Papers Must Clearly State

- The purpose of the work
- The manner and degree to which it advances the art with proper references
- Specific new results that have been obtained with clear experimental (description of the work) conditions and their significance

The degree to which the paper deals with these issues will strongly affect whether the paper is accepted. The most common cause of rejection of submitted papers is a lack of specific results. Only work that has not been previously published at the time of the conference will be considered. Paper acceptance will be based solely on the information provided on the four-page paper submitted. Promises of upcoming results will be ignored. All submissions will be checked for plagiarism.

Electronic Submission:

Only electronic submissions through the paper submission system linked to the conference website will be accepted. Do not email files to the conference office. In order for your paper to receive a full review, the following information **MUST** be entered on the website along with your submission:

- Title of paper
- Name, complete mailing address and phone, and email of first author
- Names, affiliations, city, state, country of additional authors
- Identification as invited or student paper and student travel request, if applicable
- Suggested area/topic category (as listed in this announcement) into which the paper fits
- 50-word abstract

Papers Must Include

- Title of paper
- Name, complete mailing address, phone, and email of first author and name, affiliation, city, state and country of additional authors.
- 4 pages
 - two pages of text and two additional pages of figures and drawings (no text, captions only) in 8-1/2" x 11" format describing the planned 20-minute presentation of the paper and emphasizing the findings.
 - The font size for the body of the text and in figures and captions must be at least 10 point.
- Excessive photo reduction, poor legibility, and use of arbitrary units in figures may negatively impact acceptance.
- Papers with more than 2 pages of text or figures shall be grounds for immediate rejection.
- Please avoid the use of special international fonts.

150-Word Web Page Abstract

This abstract is a brief synopsis (150 words) of your paper. Accepted 150-word abstracts will be used in preparing the IEDM web pages. The abstract should be prepared and provided during the submission process in the requested text field on the submission web site. **DO NOT INCLUDE** the 150-word abstract as a separate page with your submission.

For questions contact the conference office:
iedm-info@ieee.org

Notification of Acceptance

Authors of accepted papers will be notified by mid-September. The accepted paper will be published as-is in the Technical Digest of the 2026 IEDM. Publication in the digest in no way precludes later publication of a fuller account of the work in another journal, but **NO PUBLICATION** is acceptable before the conference. The paper must be presented at the conference by one of the listed authors. All presentations will be in-person, no exceptions. Along with uploading your PowerPoint presentation in the speaker-ready room at the conference, all speakers must upload an MP4 file of their video via the speaker dashboard no later than November 10th. The file will be used for the OnDemand portion that will be available post-conference.

Student Presentation of Papers Encouraged

Papers presented by students and based on their own work will be considered for the Best Student Paper Award. The paper must be identified as a student paper at the time of submission. The award is based on both the paper and the presentation which must be given by the student. The award will be announced and presented at the 2027 IEDM.

Student Speaker Financial and Travel Assistance

Financial assistance for travel and registration is available to students presenting papers. Assistance must be requested when the paper is submitted by choosing this option on the submission website (under "Type"). Further information on travel assistance will be included in the student's author kit. Late News Papers are not eligible for travel assistance or the student paper award.

Pre-Conference Publicity

The accepted 4-page papers and supporting information will be used by IEDM for publicity and portions of these papers may be quoted in pre-conference magazine articles and also via the web. **If this is not acceptable, authors must indicate this upon submission of paper.** Questions regarding pre-conference publicity should be addressed to the conference public relations manager:

Chris Burke cburke@btbmarketing.com 1-919-872-8172

Agreement Not to Pre-Publish

Submission of a paper for review and subsequent acceptance is considered by the committee as an agreement to the IEEE submission policy that the work will not be published by the author prior to the conference. Accepted papers or significant portions of the work must not be published in any other conference presentations with or without proceedings prior to the conference. Violation will be grounds for automatic withdrawal of the paper by the conference committee.

Late News Papers

Late News Submission Deadline: August 18th, 2026.

A very limited number of Late News Papers will be accepted. Late News Papers are not eligible for travel assistance or the student paper award. Papers should be in the same format as a regular paper and should be submitted through the submission site in the same way as for regular submissions. Authors of accepted papers will be notified by mid-September.

Authors are asked to submit late news papers announcing ONLY very recent developments.

For Further Information

All questions or inquiries for further information regarding this meeting should be directed to the Conference Office at:

iedm-info@ieee.org

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