Twenty-Seventh IEEE International Vacuum Electronics Conference

April 20-23 | **IVEC 2026** | Marriott Conference

www.ieeeivec.org | Call for Papers | Center - Monterey, CA

Dear Colleagues,

We are pleased to announce that the Twenty-Seventh International Vacuum Electronics Conference (IVEC) will take place in Monterey, CA, April 20-23, 2026. The conference will be an in-person event under the sponsorship of the IEEE Electron Devices Society (EDS). The meeting will be held at the Marriott Conference Center, and attendees from around the world will once again come to Monterey to interact with colleagues while immersing themselves in the natural beauty of the California coast and enjoying the local attractions.

The conference website is www.ieeeivec.org.

Plenary talks will provide insights into the history, the broad spectrum of fundamental physics, the scientific issues, and the technological applications driving the current directions in vacuum electronics research. Presentations will range from the fundamental physics of electron emission and modulated electron beams to the design and operation of devices at UHF to THz frequencies, theory and computational tool development, active and passive components, systems, and supporting technologies.

System developers will find that IVEC provides a unique snapshot of the current state of the art in vacuum electron devices. These devices continue to provide unmatched power and performance for advanced electromagnetic systems, particularly in the challenging frequency regimes of millimeter-wave and terahertz.

We invite you to submit papers on your work and experiences in vacuum electronics and electron sources. The meeting will efficiently disseminate useful information to device users, manufacturers, academics, and students. We encourage submission of papers from all groups and countries.

We will also have a one-day mini-course on April 20, 2026, to kick off the conference. Lectures and tutorials on different disciplines of vacuum electronics will be offered by international experts.

The John R. Pierce Award for Excellence in Vacuum Electronics, the Vacuum Electronics Young Scientist, and a Student Paper Award will be presented at the conference. As in past conferences, the meeting and social events will provide unique opportunities to renew or establish new friendships with colleagues, interact with customers and end-users, and meet students and academic researchers.

We look forward to seeing you all at IVEC 2026.

Sincerely

The IVEC 2026 Organizing Committee

Symposia and Topic Areas for 2026

The IVEC 2026 program will be organized into symposia, each led by a dedicated subcommittee. These symposia are derived from the technical themes of past IVECs and expanded to provide continuity, coherence, and strong community leadership. Papers are invited in the following areas:

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1. Traveling-Wave Tube Amplifiers: Advances from Space Applications to Terahertz Frequencies
   - Traveling-wave tubes (all types)
   - Millimeter-wave and THz amplifiers
   - Spatially distributed electron beam devices
   - Pulse compression devices
2. Fast-Wave Devices for Fusion Energy and High-Power Microwave Systems
   - Gyrotrons, gyro-amplifiers, and fast-wave oscillators
   - Free-electron lasers and masers
   - Plasma-filled amplifiers and oscillators
3. High-Efficiency Klystrons and Inductive Output Tubes
   - Klystrons (including multi-beam, compact, and high-efficiency designs)
   - Inductive output tubes (IOTs)
   - Triodes, tetrodes, and pentodes
4. Electron Sources: Thermionic, Field, and Photoemission Technologies
   - Thermionic emitters (including scandates and advanced cathodes)
   - Non-thermionic emitters (photocathodes, secondary emitters)

- Field emitters and arrays (CNTs, graphene, nanostructures)
- Cathode design, fabrication, and characterization
- Accelerator emission physics (breakdown, halo, emittance, etc.)

5. Modeling and Simulation for Design, Verification, and Optimization of Vacuum Electron Devices
   - Analysis and computer modeling (large-signal, particle-in-cell, electromagnetic solvers)
   - Adjoint methods for optimization
   - Verification and validation strategies
6. Microfabrication and Terahertz Devices
   - Micro- and nano-fabrication techniques for vacuum devices
   - Backward-wave oscillators, clinotrons, and Smith-Purcell devices
   - Metamaterials and photonic structures at THz frequencies
   - Miniaturization of vacuum devices
   - Novel measurement techniques and diagnostics
7. Advanced Manufacturing, Materials, and Quality Assurance for Vacuum Electron Devices
   - Additive and subtractive manufacturing methods
   - Novel materials (dielectrics, coatings, magnetic materials)
   - Surface processing, electropolishing, brazing, and joining
   - In-situ diagnostics and quality assurance
   - Thermal management and advanced magnet technologies
   - Reliability engineering
8. High-Power Microwaves
   - High-power microwave devices and relativistic sources
   - RF directed energy devices and systems
   - Amplifier–antenna coupling and integration
   - System survivability and hardening
   - RF interference and electromagnetic effects
   - Magnetrons and crossed-field devices (oscillators and amplifiers)
9. Supporting Subsystems: Power Supplies, and System Integration
   - Transmitters and power modules
   - Electronic power conditioners, modulators, and supplies
   - Linearizers and control systems
   - RF windows, collectors, and key components
   - Subsystem integration
   - Reliability and qualification methods

IVEC 2026 will also welcome submissions in technologically related and emerging fields:

Vacuum Nano-electronics & Quantum Electron Sources
- Ultrafast emission and quantum sources
- Nano-engineered and cold cathodes
- Compact free-electron lasers and accelerators

Reliability in High-Gradient RF: Multipactor, Mitigation & Materials
- Multipactor physics and suppression
- Vacuum breakdown and RF window failures
- Advanced materials and surfaces for high-gradient reliability

Fusion Energy Applications of Vacuum Electronics
- High-power gyrotrons for plasma heating (ECRH/ECCD)
- Mode control and transmission systems
- Fusion diagnostics and ITER applications

Space Propulsion and Power Systems with Vacuum Electronics
- Electric propulsion concepts enabled by VEDs
- High-power EPCs for satellites
- Space-qualified TWTAs and integration challenges

Emission, Beam Formation, and Crossed-Field Theory
- Fundamental emission physics and space-charge theory
- Beam formation and crossed-field device modeling
- Quantum and relativistic emission effects
- Beam–plasma interaction theory

Accelerator Systems
- RF accelerators and sources
- Vacuum electronics for synchrotrons and FELs
- Particle accelerator applications in science, medicine, and energy

Preparation of Abstracts

Prospective authors are invited to submit a 2-page abstract of the work including as many details as possible. The inclusion of figures, tables, and especially numerical data is strongly recommended.

The abstract submission deadline is December 22, 2025

Abstracts must be submitted as instructed at www.ieeeivec.org (Click on Initial Abstract Submission under Author Info).

Authors will be notified by January 23, 2026, and accepted abstracts presented at the conference will be published by the IEEE. Abstracts and a conference schedule will be available via mobile app.

Authors of accepted papers will be required to resubmit their material, in IEEE compliant format, by February 20, 2026. The instructions for resubmittal will be included in author notification letters.

Questions on abstract submission should be directed to:

Bill Klein, Palisades Convention Management
Phone: +1 212-460-8090
wklein@pcm411.com

Presentations

Each paper selected for oral presentation will be allotted a total of 20 minutes, including 15 minutes for presentation and 5 minutes for questions and discussion. Regular poster presentations will be presented at the in-person event. Additionally, poster presenters will be asked to submit a 10-minute talk about their poster to be released on the virtual platform for remote attendees to view.

Awards

Nominations are solicited for the 2026 John R. Pierce Award for Excellence in Vacuum Electronics. The Pierce Award nomination deadline is January 23, 2026.

Nominations are also solicited for the 2026 Vacuum Electronics Young Scientist. The Young Scientist nomination deadline is December 12, 2025.

Any member of the vacuum electronics community may submit a nomination for either award as described at the Electron Devices Society Vacuum Electronics website: vacuumelectronics.org.

A prize for the best student paper will be awarded during the conference. To be eligible for the award, the first author of the paper must be a full-time student, and the paper must be identified as a student paper when the abstract is submitted.

Schedule

Submission of Abstract	Dec. 22, 2025
Notification of Acceptance	Jan. 23, 2026
Revised IEEE-Compliant Abstract Due	Feb. 20, 2026

Additional Information

Please visit www.ieeeivec.org for current information about the conference.