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### Dear Colleagues,

We are pleased to announce that the Twenty-Third International Vacuum Electronics Conference (IVEC) will be held in **Monterey, California, on April 25-29, 2022**. The conference website is [www.ieeeivec.org](http://www.ieeeivec.org). This year the conference will be a hybrid event under the sponsorship of the IEEE Electron Devices Society (EDS). The in-person meeting will be held at the Marriott Conference Center, and attendees from around the world will once again come to Monterey to interact with their colleagues while immersing themselves in the natural beauty of the California coast and enjoying the local Monterey attractions. The hybrid event will permit remote attendance and conference presentations.

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.

We also have a one-day mini-course on April 25, 2022, 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 hope to see you all at IVEC 2022.

Sincerely,

*The IVEC 2022 Organizing Committee*

### Technical Subject Categories

#### 1. Vacuum Electron Devices

Traveling-wave tubes (all types)  
Crossed-field devices (oscillators and amplifiers)  
Klystrons  
Spatially distributed electron beam devices  
Inductive output tubes  
Fast-wave devices (gyrotrons, gyro-amplifiers)  
Free-electron lasers and masers  
Millimeter-wave and THz amplifiers and oscillators  
Pulse compression devices  
Plasma-filled amplifiers and oscillators  
High-power microwave devices / RF directed energy  
Triodes, tetrodes and pentodes  
Power switches  
Vacuum nanoelectronics

#### 2. Vacuum Electron Sources and Technologies

Thermionic emitters  
Non-thermionic emitters (e.g. photocathodes, secondary emitters)  
Field emitters / arrays  
Materials and technology  
Cathode design, fabrication, and characterization  
Accelerator emission physics (breakdown, halo, emittance, etc.)

#### 3. Systems and Subsystems

Transmitters  
Microwave and millimeter-wave power modules  
Electronic power conditioners, modulators, and supplies  
Linearizers  
Amplifier-antenna coupling  
Device and system integration  
Reliability

#### 4. Technologies

Component parts (e.g. guns, circuits, windows, collectors)  
Analysis and computer modeling  
Novel materials (e.g. dielectrics, coatings, magnetic materials)  
Metamaterials  
RF breakdown and multipactor phenomena  
Linearity, intermodulation, and noise  
Novel measurement techniques and diagnostics  
Miniaturization  
Thermal power management and control  
Sensors and detectors

#### 5. Applications of Vacuum Electron Devices

Defense  
Space  
Radar  
Telecommunications  
Medicine  
Particle accelerators  
RF interference  
Instruments and lithography  
Materials processing  
Electric propulsion

### Additional Information

Please visit [www.ieeeivec.org](http://www.ieeeivec.org) for current information about the conference.

### 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 20, 2021.**

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

Authors will be notified by January 28, 2022, and accepted abstracts presented at the conference will be published by the IEEE. Abstracts and a conference schedule will be available on a mobile app.

Authors of accepted papers will be required to resubmit their material, in IEEE compliant format, by February 21, 2022. The instructions for resubmittal will be included in author notification letters.

Questions on abstract submission should be directed to:

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**411 Lafayette Street, Suite 201**  
**New York, NY 10003**  
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### 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 2022 John R. Pierce Award for Excellence in Vacuum Electronics. **The Pierce Award nomination deadline is January 28, 2022.**

Nominations are also solicited for the 2022 Vacuum Electronics Young Scientist. **The Young Scientist nomination deadline is December 13, 2021.**

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](http://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	December 20, 2021
Notification of acceptance	January 28, 2022
Revised IEEE-compliant abstract due	February 21, 2022