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EDS Vacuum Electronics Technical Committee

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Dear Colleagues,

We are pleased to announce that the Twenty-First International Vacuum Electronics Conference (IVEC) will be held in **Monterey, California, on April 20-23, 2020**. The conference website is www.ieeeivec.org. The meeting will be held at the Marriott Conference Center under the sponsorship of the IEEE Electron Devices Society (EDS). Visitors from around the world come to Monterey to experience its natural coastal beauty, to visit the renowned Monterey Bay Aquarium, and to experience its rich historic past memorialized in the novels of John Steinbeck.

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 electromagnetics 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 minicourse on April 20, 2020, 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 2020.

Sincerely,

The IVEC 2020 Organizing Committee

Call for Papers

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
mm-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

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)

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
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 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 **deadline** to submit abstracts for Program Committee review is **December 23, 2019**.

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

Authors will be notified by January 24, 2020, and accepted abstracts presented at the conference will be published by the IEEE. A USB memory stick containing the published abstracts will be distributed at the meeting.

Authors of accepted papers will be required to resubmit their material, in IEEE compliant format, by February 21, 2020. The instructions for resubmittal will be included in author notification letters.

Questions on abstract submission should be directed to:

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Oral 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. To maintain the session schedule, authors are asked to ensure that their presentations conform to these time constraints.

Awards

Nominations are solicited for the 2020 John R. Pierce Award for Excellence in Vacuum Electronics. Any member of the vacuum electronics community may submit a nomination as described at the Electron Devices Society Vacuum Electronics website: vacuumelectronics.org (click on the John R. Pierce Award link). The deadline is January 30, 2020.

Nominations are also solicited for the 2020 Vacuum Electronics Young Scientist. Any member of the vacuum electronics community may submit a nomination as described at the Electron Devices Society Vacuum Electronics website: vacuumelectronics.org (click on the Vacuum Electronics Young Scientist link). The deadline is December 1, 2019.

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 23, 2019
Notification of acceptance	January 24, 2020
Revised IEEE-compliant abstract due	February 21, 2020