

Second Announcement and Call for Papers



79th Annual Gaseous Electronics Conference
held jointly with the
68th APS Division of Plasma Physics Conference

November 2 - 6, 2026

Hilton Chicago

Chicago, IL



Organized by
GEC Executive Committee

Supported by
American Physical Society

<https://www.apsgec.org/gec2026/>

General Information

The APS Division of Plasma Physics (DPP) and Gaseous Electronics Conference (GEC) Joint Meeting will bring together 2,500+ physicists from around the world for one collaborative week of plasma physics and gaseous collision science.

The Gaseous Electronics Conference has a long leadership history in providing a venue for the exchange of ideas and reporting research results in low temperature plasma science and technology. Areas of emphasis include science of plasma sources, diagnostics, modeling, plasma chemistry, basic phenomena, and atomic and molecular collision processes. It is also a leading venue for reporting on emergent areas of plasma-based technologies, including microelectronics, propulsion, biotechnology, plasma medicine, multiphase plasmas, environmental applications and atmospheric-pressure plasma systems. The meeting will continue the tradition of being a leading venue for the advancement of low temperature plasma science and technology.



Scientific Program

The scientific program occurs from Tuesday-Friday with three to four parallel oral sessions consisting of contributed talks, invited talks, and Prize talks, which are 15, 30, and 45 minutes in length, respectively. Contributed posters will be presented during the afternoon poster sessions in the middle of the week.

The main program is preceded by workshops on Monday. Workshop topics change on a yearly basis and range from industrial plasmas, catalytic effects in plasma-liquid interaction, functional processes in plasma-solid reactions, and plasmas for space propulsion.

Conference Topics

1. Atomic & molecular process

- 01.00 Collisional and dynamical processes at the atomic and molecular level
- 01.01 Electron and photon collisions with atoms and molecules: excitation
- 01.02 Electron and photon collisions with atoms and molecules: ionization
- 01.03 Heavy-particle collisions
- 01.04 Dissociation, recombination and attachment
- 01.05 Distribution functions and transport coefficients for electrons and ions
- 01.06 Other atomic and molecular collision phenomena

2. Plasma science

- 02.00 Evaluation and discovery in plasma science and engineering
- 02.01 Nonequilibrium kinetics of low-temperature plasmas
- 02.02 Basic plasma physics phenomena in low- temperature plasmas
- 02.03 Plasma boundaries: sheaths, boundary layers, others,
- 02.04 Plasma-surface interactions
- 02.05 Gas phase plasma chemistry
- 02.10 Laser and active plasma diagnostic methods
- 02.11 Emission spectroscopy and imaging techniques
- 02.12 Probes and sensors
- 02.13 Other/novel diagnostic techniques
- 02.20 Modeling and simulation: computational methods
- 02.21 Modeling and simulation: validation and verification
- 02.22 Modeling and simulation: plasma sources
- 02.23 Modeling and simulation: plasma chemistry

- 02.24 Modeling and simulation: plasma dynamics
- 02.25 Modeling and simulation: other
- 02.30 Glows: dc, pulsed, microwave, others
- 02.31 Capacitively coupled plasmas
- 02.32 Inductively coupled plasmas
- 02.33 Magnetically-enhanced plasmas: ECR, helicon, magnetron, others
- 02.34 Atmospheric pressure plasma jets and gliding arcs
- 02.35 Dielectric barrier discharges
- 02.36 Corona and streamer discharges
- 02.37 Other atmospheric and high pressure plasmas
- 02.38 Thermal plasmas: arcs, jets, switches, others
- 02.40 Plasmas in liquids
- 02.41 Plasma on or contacting liquids
- 02.42 Plasmas and aerosols
- 02.43 Negative-ion and dust-particle-containing plasmas
- 02.50 Other plasma science topics

3. Plasma applications

- 03.00 Emergence and advancement of plasma applications
- 03.01 Plasmas for light production: laser media, glows, arcs, flat panels, and novel sources
- 03.10 Plasma-surface interaction
- 03.11 Plasma etching
- 03.12 Plasma deposition
- 03.13 Plasma-ion implantation
- 03.14 Plasmas for nano-science, nano-technologies, and flexible electronics
- 03.15 Plasma for photovoltaic applications, for other industrial materials processing, and for synthesis technology
- 03.20 Green plasma technologies: environmental and energy applications
- 03.21 Biological, medical, and agricultural applications of plasmas
- 03.22 Plasma catalysis and chemical conversion
- 03.23 Plasma-assisted combustion and aerodynamics
- 03.30 Novel thruster, neutralizer, alternative propellant for electric propulsion
- 03.40 Divertor plasma structure, conditions, and respective diagnostics in fusion energy development

Plenary and Invited Speakers

Plenary

Will Allis Prize Talk



Mounir Laroussi

Professor Emeritus at Old Dominion University

Citation: “For seminal contributions to the physics and diagnostics of low-temperature plasma jets and guided ionization waves, and for conducting pioneering work on their biomedical applications.”

The GEC Executive Committee is pleased to recognize Mounir Laroussi as the recipient of the 2026 Will Allis Prize for the Study of Ionized Gases.

For more information about the Will Allis Prize and past recipients, see:

<https://www.aps.org/funding-recognition/prize/will-allis-prize>

General Sessions

Kallol Bera, Applied Materials, “Plasma Dynamics in Single & Multi-slot RF Hollow-Cathode Discharges”

Michael Campanell, Lawrence Livermore National Lab USA, “How much current can be transmitted from electron-emitting cathodes through plasmas?”

Bhaskar Chaudhury, Dhirubhai Ambani U, India, “Coupling Data-Driven approaches with Fluid and Particle-in-Cell Models for Low Temperature Plasma simulations”

Shinatora Cho, JAXA, "Japanese Hall-Thruster-Based Multimode Propulsion: Physics, System Development, and the In-Orbit Demonstration (X-HISAME)"

Nirbhav Chopra, Princeton Plasma Physics Lab and Applied Materials, “Multimodal azimuthal oscillations in electron beam generated $E \times B$ plasma”

James Danielson, UCSD, ”High-resolution measurements of near-threshold positronium formation in atoms and molecules”

Andrew Denig, Stanford University, “Kinetic theory and simulations of instabilities in partially magnetized plasma”

Yangyang Fu, Tsinghua U, “Generalized Similarity Theory for Plasmas”

Ivo Furno, Ecole Polytechnique Federale de Lausanne, “Experimental investigation of antimicrobial properties of plasma-activated water”

Kenji Ishikawa, Nagoya U, “Plasma etching: Leading-edge semiconductor plasma processing via energy-efficient, environmentally benign, and evolutionary techniques”

Masafumi Jinno, Ehime U, “Plasma-Induced Molecular and Gene-Introduction Phenomena: Recent Insights and Remaining Challenges”

Mark Johnston, Sandia National Laboratories, USA, “Visible Spectroscopy within the MITL-APP Interfacial Surface Plasma for Designing and Managing MITL-Electron Flow and Power Delivery.”

Igor Kaganovich, Princeton Plasma Physics Lab, "New Insights on Collisionless Electron Kinetics in Low Pressure RF Discharges"

Toshiro Kaneko, Tohoku U, Plasma–liquid interfaces that produce reactive species

Hyun-ha Kim, National Institute of Advanced Industrial Science and Technology (AIST), “Critical oxygen line and kinetics for sustainable plasma nitrogen fixation”

Naoto Kodama, Nagoya U, “Development SF₆- and PFAS-free arc-quenching medium based on electron energy exchange processes analysis“

Florian Krueger, TEL TechnologyCenter, America, LLC, “Plasma etching: Simulating Ion and Radical Dynamics in High-Aspect-Ratio Plasma-Etch Applications”

Akiko Kumada, U Tokyo, “Overview of research on optical electric field measurements in high-voltage engineering”

Mark Kushner, U Michigan, “Plasma science: Plasma-Surface interaction“

Florian Laggner, NC State U, “Large-Scale, High-Power Radio-Frequency Inductively Coupled Plasma Ion Sources for Neutral Beam Heating in Fusion Reactors”

Mounir Laroussi, Old Dominion University, “Cold Plasma for Biology and Medicine: An Unexpected Research Journey”, 2026 Allis Awardee

Dmitry Levko, Lam Research Corp, “How to use plasma-surface interaction modeling for validating the gas-phase mechanism”

Petr Lukes, Institute of Plasma Physics of the Czech Academy of Sciences, Prague, "The liquid chemistry in plasma-liquid interactions"

Tran Trung Nguyen, Nagoya U, “Photo-electron photo-ion coincidence study of valence fragmentation of hydrofluoro-carbon molecules”

Tomohiro Nozaki, Institute of Science Tokyo, Plasma catalysis and chemical conversion: ”Harnessing plasma-driven catalysis for electrified autothermal reaction engineering”

Jordyn Polito, Oxford Instruments, "The simulation of complex plasma chemistries relevant for the processing of compound semiconductor materials”.

Rupali Sahu, Applied Materials, Radio-Frequency Power Pulsing for Electronegative Capacitively-Coupled Plasma”

Julian Schulze, Ruhr U-Bochum, Germany, “Experimental validation of plasma simulations for the development of digital twins“

Ramses Snoeckx, Empa Swiss Federal Laboratories for Materials Science and Technology, “Electrons, kinetics, and entropy — unlocking the full potential of plasma-based gas conversion”

Jacob C. Stevens, Texas Tech U, Lubbock, TX, “Statistical, sub-Paschen breakdown events in spark gaps”

Tsutsumi Takayoshi, Nagoya U, “Aspect-ratio dependent mass spectrometry for high-aspect-ratio-feature plasma etching”

Manabu Tanaka, Kyushu University, “High-speed optical imaging of high-current arc plasmas: spatiotemporal fluctuations and emerging structures”

Edward Thomas, Jr., Auburn University, "The role of the magnetization and transport of electrons and ions on the properties of low temperature plasmas and dusty plasmas"

Harigai Toru, Gifu U, “Enabling Hydrogen-Free Diamond-Like Carbon Films via Plasma CVD and Their Functional Properties”

Duncan Trosan, North Carolina State U, “Flexible surface DBDs for sanitation of fresh produce - What plasma science can teach us to make the process more efficient”

Rochan Upadhyay, Lam Research Corp, “Computational studies of very high frequency capacitively coupled plasmas”

Christophe Vallee, U Albany, USA, "Selectivity in Radical Plasma processes — switching from selective etching to selective deposition”

Klaus-Dieter Weltmann, Leibniz-Institut für Plasmaforschung und Technologie (INP), "Cold atmospheric plasma in medicine — status and perspectives"

Robyn Wilde, Oregon Institute of Technology, “Dissociative positronium attachment in halogen gases”

Yusuke Yamashita, ISAS/JAXA, “Kinetic modeling of hysteresis in DC discharge and single- and dual-frequency RF breakdown”

Benjamin Yee, Lam Research Corp, “Metrology challenges and opportunities in semiconductor deposition processes”

Contributed Papers

Process

Contributed papers will be given orally in a 15-minute timeslot (12 minutes for presentation and 3 minutes for questions) or as a poster. For either mode, authors must submit an abstract, which succinctly identifies the problem, describes the approach, and summarizes the status or result of the completed or intended intellectual contribution. Contributors must submit abstracts using the Abstract Submission site:

<https://www.apsgec.org/gec2026/abstracts.php>

Before you start

- Know the number and the order of authors
- Proofread the abstract
- Abstracts are limited to 1,300 characters (about 250 words)
- Note the sorting category (category list) or focus topic
- Presentation Summary: Please provide a brief summary of your presentation written for a general audience. The summary should describe the “take-home” messages of your talk and their implications.

If your abstract is accepted, you must be willing, present, and prepared to give the presentation.

To submit an abstract, you must:

1. Use the GEC sorting category list when submitting, available at:
<https://www.apsgec.org/gec2026/GEC%202026%20Sorting%20Categories.pdf>
2. Know the correct ordering of authors and collaborators, and
3. Submit abstract content. The website will ask you for an APS membership number. If you are not an APS member, you may type “GEC abstract” in the member ID box when submitting.

General information about APS abstract submission can be found here:
<https://www.aps.org/about/governance/policies-procedures/abstract-submission>

Venue



Conference Hotel

Hilton Chicago

720 South Michigan Avenue

Chicago, IL 60605, USA

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<https://www.hilton.com/en/hotels/chichhh-hilton-chicago/>

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Check-in time: 3:00 PM

Check-out time: 11:00 AM

Google Map: <https://maps.app.goo.gl/inaXG8CiAKfc8phB6>

Hilton Chicago. Overlooking Grant Park, Lake Michigan, and Museum Campus, the hotel is situated on Michigan Avenue, where incredible experiences are around every corner. Walk to Soldier Field for game days or concerts, enjoy many festivals at Grant Park, or explore the Pilsen neighborhood, known for one of the best museums in the city, booming bar and restaurant scene.

Rooms: <https://www.hilton.com/en/hotels/chichhh-hilton-chicago/rooms/>

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