The Newsletter of the International Low Temperature Plasma Community (ILTPC)

Issue 46
December 6, 2024

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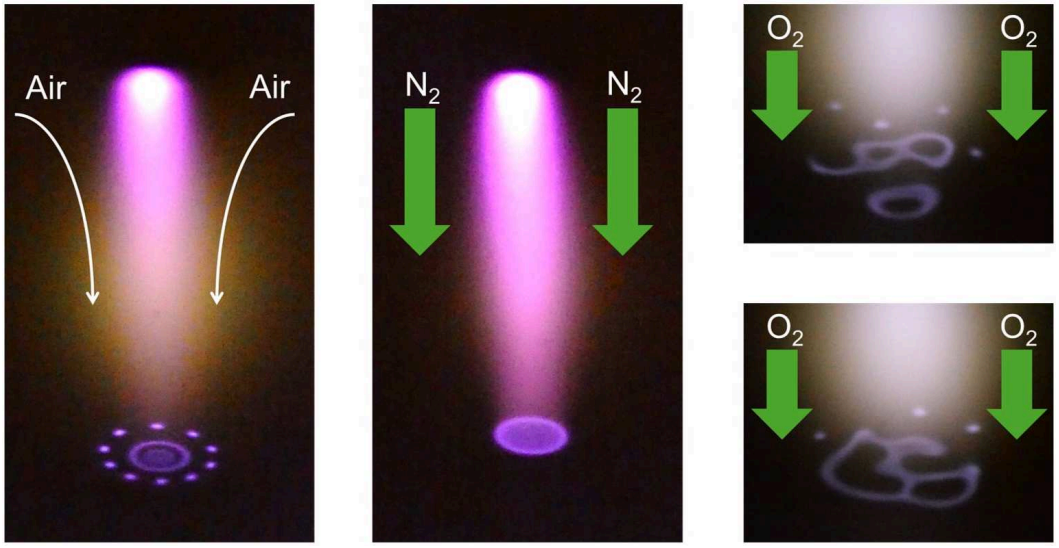
Call for Contributions

Please submit content for the next issue of the Newsletter. Please send your contributions to **editor@iltpcnewsletter.org** by February 7, 2025. Please send contributions as MS-Word files (***.docx**) if possible. In particular, please send Research Highlights and Breakthroughs using **this template**. You can also directly download the template in docx format **here**. (Please do **not** send files in doc format.)

The highlight consists of an image and up to 200 words of text; please also send your image as a separate file (the recommended image format is JPG or PNG; the minimum file width is 800 px). The topic can be anything you want - a recently published work, a new unpublished result, a proposed new area of research, company successes, anything LTP-related. When submitting a highlight, please provide information in the submission Email that justifies classification as a highlight. Criteria are: in a Highlight, the results or the approach should be surprising, of extraordinary quality, and should have impact beyond the submitting team.

Images to Excite and Inspire

Please send your images (with a short description) to editor@iltpcnewsletter.org. The recommended image format is TIF, JPG, or PNG. The minimum file width is 800 px.



Example images of a discharge and its pattern formation. The pattern forms when the discharge is generated in ambient air. The pattern never forms when the discharge is generated with the nitrogen sheath gas. The pattern changes when the discharge is generated with the oxygen sheath gas.

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Source:
Plasma Sources Sci. Techol. 33, 115007 (2024),
https://iopscience.iop.org/article/10.1088/1361-6595/ad8c7b

LTP Perspectives: Policy, Opportunities, Challenges

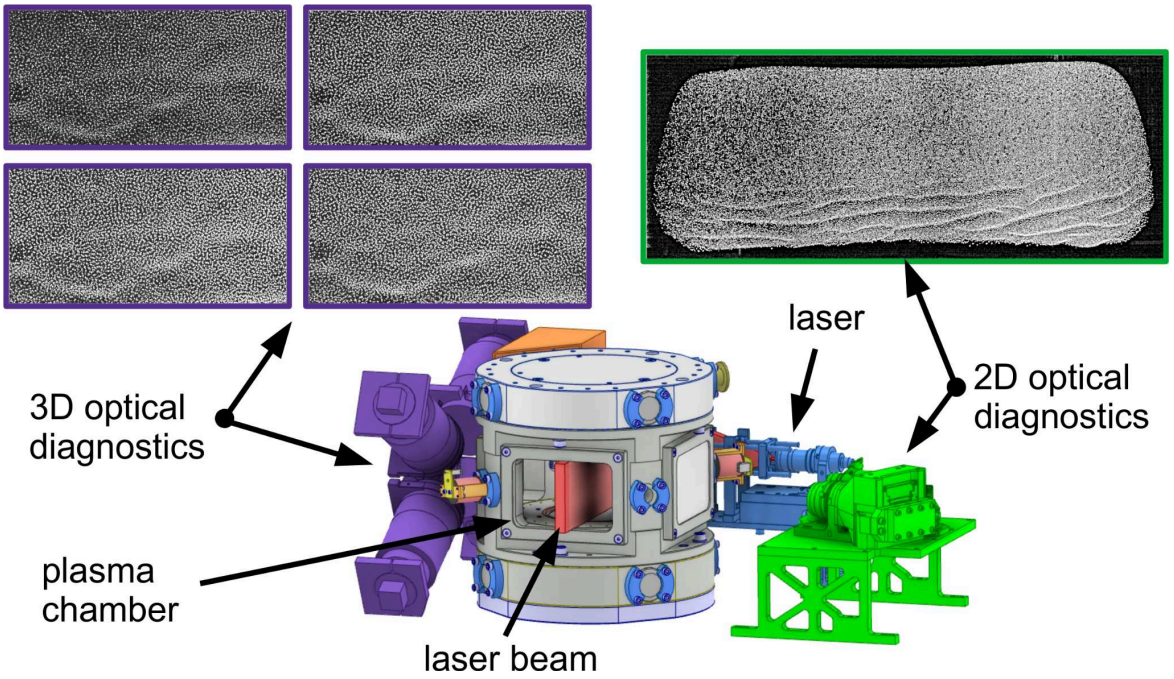
Please submit your notices for LTP Perspectives to editor@iltpcnewsletter.org.

Dusty low-temperature plasmas under microgravity

Gravity is usually considered unimportant in low-temperature plasmas. However, it becomes a dominant force for micrometer-sized dust particles that are trapped in or have been immersed into a low-temperature plasma environment. In such a dusty (or complex) plasma,

the microparticles acquire high negative charges from the ambient plasma and, hence, the particles become a plasma constituent themselves. The temporal and spatial scales in a dusty plasma are ideally suited to follow the dynamics of the microparticles on the individual kinetic level. Thus, dusty plasmas play an important role in understanding technologically relevant low-temperature plasmas with reactive gases where particles can grow from polymerization of the gas, or in astrophysical situations. They also serve as a bridge between plasma physics, many-particle systems, condensed matter and statistical physics.

Under Earth's gravity conditions the dust particles are forced into the plasma sheath with its non-equilibrium environment and strong ion flows. To study dusty plasmas under nearly equilibrium conditions the experiments need to be performed under microgravity conditions, which has been recognized already in the very early years of dusty plasma research. Since then, numerous experiments have been performed, e.g. under the weightlessness of parabolic flights or in facilities aboard the ISS.



So, why still bother about dusty plasmas under microgravity? Recent technological developments in chamber design and radio-frequency excitation of the embedding low-temperature plasma allow us to create extended, homogeneous dust clouds where also residual ion flows are suppressed, opening up areas of research for dusty plasma not accessible to previous experimental setups. Novel cameras and continuous progress in stereoscopic image analysis have made it possible to reconstruct the positions of thousands of particles within the dust cloud in all three dimensions. The planned multi-user facility COMPACT (COMplex PlasmA faCiliTy), which is currently in industry phase B (preliminary definition) and which is funded by the German Aerospace Center DLR, will host a large chamber with sophisticated radio-frequency-driven plasma generation together with a four-camera stereoscopic system.

With COMPACT, novel research questions come into reach in various fields, like statistical physics (equation of state, transport properties or thermodynamics), active and

non-spherical particles and their collective effects, phase transitions and glassy states as well as nonlinear dynamics and turbulence. Since the facility is capable of producing very low-density plasmas, dust in astrophysical situations, such as lunar dust, and their charging and transport will also come within reach. Moreover, such remote experiments provide ideal testbeds for the application on machine learning algorithms for the sensing and control of the plasma conditions, for the “quick-look" analysis of dust particle arrangements and for data reduction techniques.

Due to the many facets involved, microgravity plasma research offers unique opportunities to drive knowledge gain in the scientific understanding of many-particle systems, in the technical developments of reactive low-temperature plasmas with designed properties, and in the application of machine-learning algorithms. Especially COMPACT might help to explore the potential of commercial low-Earth orbit flight companies for microgravity plasma research. So, dusty low-temperature plasmas under microgravity not only advance plasma physics, but may stimulate other neighboring disciplines.

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Christina Knapek
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Leaders of the LTP Community: Career Profiles

Professor Eun Ha Choi – Pioneering Innovations in Plasma Science for Bio, Healthcare, Environment, and Beyond

After completing his PhD in Plasma Physics at Korea Advanced Institute of Science and Technology (KAIST) and postdoctoral training/research associate and assistant professor/contractor at leading institutions in the USA (Naval Surface Warfare Center/Catholic University and Hampton University/NASA), Professor Eun Ha Choi joined Korea Research Institute of Standard and Science and Kwangwoon University in early 90s. Between 2000 and 2002, he joined Texas Tech University. Since then, he has been the director of the PDP Research Center, the Plasma Bioscience Research Center (PBRC), the Applied Plasma Medicine Center (APMC), and, more recently, the University Key Research Institute (UKRI-PBRC). In addition, he is the Founder and Chief Executive Officer (CEO) of Plasade Inc., a pioneering plasma technology venture company.

Professor Choi's work in Plasma Medicine began with studies on the interactions of atmospheric pressure plasma with biological tissues and cells. By 2011, this research had evolved into practical applications for cancer therapy, wound healing, and immunomodulation. His contributions have helped establish the scientific foundations of Plasma Medicine.

Early in his career, he contributed to plasma diagnostics and extreme ultraviolet generation, plasma display technology and thin-film technology. He has also led research in plasma nanotechnology and environmental sustainability. Examples are plasmas for environmental contaminant mitigation, plasma-based agriculture, and cosmetic applications like skin health and regeneration.

Beyond his scientific achievements, Prof. Choi has demonstrated commitment to global collaboration and education. He has initiated the development of internationally recognized standards in Plasma Medicine. His publication record includes over 700 peer-reviewed articles and nearly 100 patents. Professor Choi was honored with the 'Plasma Medicine Award (PMA) for Lifetime Achievement by the International Society of Plasma Medicine in 2016.

On a personal level, Professor Choi is known for his kindness and accessibility. He is approachable and dedicated to mentoring students and colleagues alike. His ability to inspire and connect with people across all levels of academia is exemplary.

Prof. Nagendra Kumar Kaushik
Department of Electrical & Biological Physics/ Plasma Bioscience Research Center
Kwangwoon University, Seoul, Republic of Korea

General Interest Announcements

Please submit your notices for General Interest Announcements to editor@iltpcnewsletter.org.

2025 European Physical Society Plasma Physics Innovation Prize for technological, industrial or societal applications of research in plasma physics

The EPS Innovation Prize was established in 2008 by the EPS Plasma Physics Division to recognise and promote the wider benefits to society that arise from the applications of plasma physics research. The work recognised in previous years is diverse. Nominations are welcome from all areas of technology, industry, society or more. Recent awards have included applications in medicine and materials processing.

The prize is awarded for proven applications that can go beyond, but are derived from, plasma physics research. Joint awards are also possible and can be submitted from a group of up to three individuals.

Nominations for the 2025 EPS Plasma Physics Innovation Prize can be submitted until **February 16 2025.** For the nomination form and further information please visit:
http://plasma.ciemat.es/eps/awards/innovation-award/

Contact:
Prof. Kristel Crombé
Chair o the EPS Plasma Physics Division Board
kristel.crombe@ugent.be

Meetings, Online Seminars, and Schools

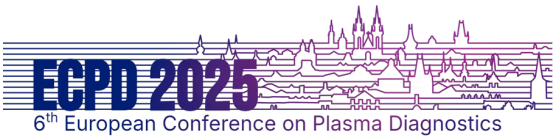
Please submit your notices for Meetings and Online Seminars to editor@iltpcnewsletter.org.

36th International Conference on Phenomena in Ionized Gases (ICPIG 2025), Aix-en-Provence, France 20-25 July 2025

We cordially invite you to the XXXVI International Conference on Phenomena in Ionized Gases (ICPIG 2025) to be held in Aix-en-Provence, France, from 20th to 25th July 2025. ICPIG is a biannual conference covering since 1953 all aspects of low-temperature plasmas: fundamentals of plasma physics, simulation and diagnostics, all plasma sources and discharge regimes, applications. ICPIG combines invited talks, contributed talks selected based on abstracts, and poster sessions.
Abstract submission opens January 2025. For more information, please visit the ICPIG website.

Contacts:
Dr Sander Nijdam: chair of the International Scientific Committee
Dr Gilles Cartry: chair of the local organizing committee
Dr Lénaïc Couedel and **Dr Marco Minissale:** co-chairs of the local organizing committee
icpig2025@sciencesconf.org

6th European Conference on Plasma Diagnostics



6th European Conference on Plasma Diagnostics (ECPD), will be held from April 7 – April 10, 2025, in Prague, Czech Republic.

The ECPD is an event taking place every two years aiming at bringing together scientists and engineers working on plasma diagnostics for magnetic confinement fusion, inertial fusion, beam plasmas, low-temperature and industrial plasmas as well as basic and astrophysical plasmas.

The sixth edition of the Conference will be held at the DUO Hotel congress center and organised by the Institute of Plasma Physics of the Czech Academy of Sciences.

The event will feature the ECPD Prize Award Lecture for Outstanding Achievements in Plasma Diagnostics, Tutorial (45 min) and Invited (30 min) lectures from leading experts in the field, oral (20 min) presentations selected from the submitted contributions and poster presentations.

Important dates:
Abstract submission opening: mid November 2024
Abstract submission deadline: end of December 2024

Contact: ecpd2025@ipp.cas.cz
Source: http://www.ecpd2025.cz/

4th Workshop on FAIR Data in Plasma Science (FDPS-IV)

We are happy to announce the 4th Workshop on FAIR Data in Plasma Science (FDPS-IV), which will take place on **12-13 May, 2025 at the Leibniz Institute for Plasma Science and Technology (INP) in Greifswald, Germany**. The event will also offer the option for virtual participation. The workshop is a continuation of annual events on research data management in the low-temperature plasma (LTP) community in the past years. It aims to inform about current developments and to strengthen community exchange on this topic.

The FDPS-IV workshop is intended to provide an overview over successful solutions for collaborative research data management with the goal to make data findable, accessible, interoperable and reusable (FAIR), finally supporting the broader use of data-driven research methods. This includes best practice in day-to-day research work as well as infrastructure tools for handling of research data. Successful examples from plasma research groups and collaborative research centers will be presented and we will discuss the further development

of data sharing and reporting standards for the LTP community.

The workshop will be held as a hybrid meeting and participation is free of charge. Please save the date and register by following the registration link on the workshop website: https://www.plasma-mds.org/ws-fair-data-plasma-science-4.html.

Attendance in person at INP is limited, so early registration is encouraged. The application form will be closed on 4th May, 2025.

The workshop organization is part of the activities of the working group Experimental Plasma Physics at the Kiel University (CAU), the INF project of the CRC 1316 at the Ruhr-University Bochum (RUB) and of the department Plasma Modelling and Data Science at Leibniz Institute for Plasma Science and Technology (INP).

Contact:
Dr. Markus Becker
Leibniz Institute for Plasma Science and Technology (INP), Greifswald, Germany
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United States Low Temperature Plasma Summer School ISPC Summer School, ASPIRE Summer School University of Minnesota, June 14-16, 2025

Organizers:
Peter J. Bruggeman (University of Minnesota)
Satoshi Hamaguchi (Osaka University)
Gerrit Kroesen (TU Eindhoven)
Mark J. Kushner (University of Michigan)

The US LTP Summer School will be co-located with the International Symposium on Plasma Chemistry (ISPC) in collaboration with ASPIRE to provide opportunities for graduate students and early career researchers to be immersed in the fundamentals and applications of low-temperature plasmas and to learn from leading researchers in their field. There will be a special session on Plasma Materials Processing (PMP) for Microelectronics Fabrication.

Registration process:
Please send an expression of interest by filling in the questionnaire: https://forms.gle/UtQK3ojCTsdaAjw76.

Registration deadline:
April 1st, 2025 or until the maximum number of participants is reached.
More information: https://z.umn.edu/9wud
Contact: usltpss@umn.edu

ISPC 26TH INTERNATIONAL SYMPOSIUM ON PLASMA CHEMISTRY
Minneapolis, USA
June 15th – 20th 2025

https://www.ispc-conference.org/

Topics
Fundamentals of low-pressure plasma
Fundamentals of thermal plasma
Fundamentals of atmospheric non-equilibrium plasma
Diagnostics in plasma chemistry
Modelling in plasma processing
Plasma in and in contact with liquids
Plasma processing of nanomaterials and nanostructures
Plasma deposition of functional coatings
Plasma-based gas conversion
Plasma-assisted combustion and aerodynamics
Plasma medicine and agriculture
Plasmas for environmental applications

ABSTRACT SUBMISSION IS OPEN. DEADLINE: December 1ST, 2024

Chair:
P. Bruggeman
Co-Chairs:
U. Kortshagen, M. Simeni Simeni

Online Low-Temperature Plasma (OLTP) Seminar Series

The schedule for OLTP seminars and more information on the program, including links to past seminars, can be found at the OLTP website. The seminars are held on Tuesdays at 10:00 am EDT or EST via Zoom and are free to access.

Co-Chairs:
Dr. Ana Borras
CSIC, University of Seville, Spain
anaisabel.borras@icmse.csic.es
Dr. Mohan Sankaran
University of Illinois, Urbana-Champaign, USA
rmohan@illinois.edu

IOPS Online Seminars

The International Online Plasma Seminar (IOPS) is continuing to provide the international community with regular opportunities to hear from leading researchers in the field. The program of the IOPS (and links to past seminars) can be found at: http://www.apsgec.org/main/iops.php. Nominations for future speakers scheduled for November 2024 to April 2025 can be submitted through this page until September 13, 2024.

Dr. Jun-Chieh Wang
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GEC-IOPS Chair
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Prof. Quan-Zhi Zhang
Dalian University of Technology, China
GEC-IOPS Co-Chair
qzzhang@dlut.edu.cn

Community Initiatives and Special Issues

Please submit your notices for Community Initiatives and Special Issues to editor@iltpcnewsletter.org.

New Resources

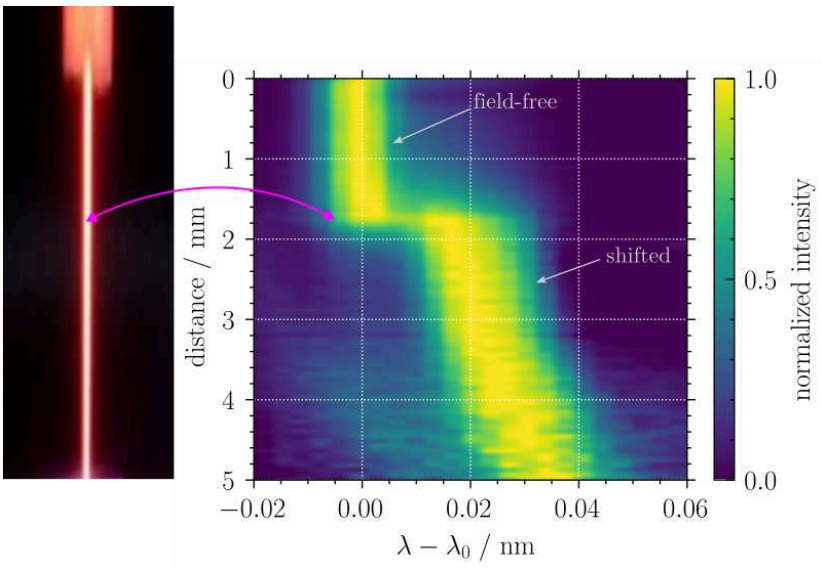
Please submit your notices for New Resources to editor@iltpcnewsletter.org.

Research Highlights and Breakthroughs

Please submit your notices for Research Highlight and Breakthroughs to editor@iltpcnewsletter.org.

Advances in Atmospheric Pressure MicroPlasma Jets: the „plasma afterglow-streamer dualism“

This study presents novel and substantial developments in the domain of room-temperature atmospheric pressure plasma jet devices, with particular relevance to applications in biology and medicine. By employing advanced optical emission spectroscopy techniques, the fundamental physical principles of this device were examined, and its unique characteristics were revealed.



This work reveals three significant advances:

- The first measurement of intense electric field with the help of the weak Neon line emission in atmospheric pressure streamers.
- The first evidence of a transition in the elementary plasma processes with the growth of a streamer from the afterglow of a capacitively coupled discharge. This unique property is confirmed with the space resolved measurement of the electric field in Helium and Neon gases.
- The unique capability to operate a single device as an “EF-free” APPJ (electric field free atmospheric pressure plasma jet) while having the possibility to switch to a more conventional guided ionization wave APPJ. The EF-free APPJ is exemplified by the COST-Reference jet, allowing for the generation of reactive oxygen and nitrogen species (RONS) without producing a strong EF delivered to the treated substrate (e.g. biological material, cells, seeds,...).

We believe this work opens new avenues for the application of endoscopic plasma sources.

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GREMI Orleans, FRANCE
sylvain.iseni@univ-orleans.fr

Source:
ISÉNI S., NISHIME T. M. C. and GERLING T., “Transition from afterglow to streamer discharge in an atmospheric capacitively coupled micro-plasma jet,” Applied Physics Letters 125(20), 203502 (2024), https://doi.org/10.1063/5.0232114

Plasma-assisted NH_3 cracking in warm plasma reactors for green H_2 production

NH_3 is emerging as a carrier of green H_2, but it requires a green and economical NH3 cracking process based on renewable energy. Plasma technology is promising for this purpose, as it can crack NH_3 without the need for a catalyst and is highly compatible with renewable electricity, reducing the environmental footprint of the cracking process. This work investigates the NH_3 cracking performance of four different warm plasma reactors with different configurations and operating in a wide range of conditions. We show that the NH3 conversion in warm plasma reactors is primarily determined by the specific energy input, with the main difference observed in the energy cost (EC) of cracking. The lowest EC obtained is 146 kJ/mol but at a conversion of only 8 %. A more reasonable conversion of around 50 % yields an EC of around 200 kJ/mol in two of the reactors investigated. Plasma reactors operating at higher feed flow rates are more efficient and yield a higher H_2 production rate.

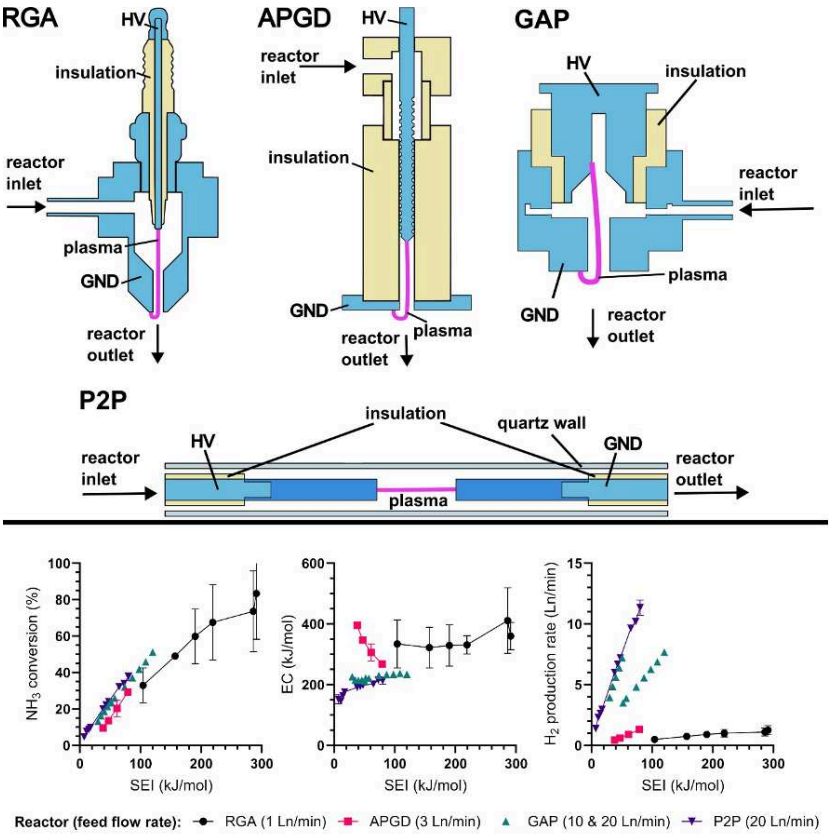

Figure: Top: schematic diagrams of the four investigated plasma reactors: rotating gliding arc (RGA), atmospheric pressure glow discharge (APGD), gliding arc plasmatron (GAP), and pin-to-pin arc discharge (P2P). Bottom: NH3 conversion (left), EC (middle), and H2 production rate (right) in the investigated plasma reactors, as a function of SEI per mole of NH3 feed at the best-performing feed flow rate of each reactor.

Our data indicate that NH3 cracking in these warm plasma reactors occurs mainly via thermal chemistry, with non-thermal plasma chemistry playing a less prominent role. NH3 decomposes not only inside the plasma core but also in a hot volume around it, which reduces the EC. Our study shows that warm plasmas are significantly more efficient for NH3 cracking than cold plasmas, even when the latter are combined with catalysts.

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Source:
Chemical Engineering Journal, 499, 2024, 155946
https://doi.org/10.1016/j.cej.2024.155946

Noteworthy Papers

This new section is intended to feature new noteworthy publications in the field of low-temperature plasma science that have appeared in **journals outside the standard reading repertoire of the ILTP community.**

Please submit your notices for Noteworthy Papers to editor@iltpcnewsletter.org.

Multi-Oxidant Environment as a Suicidal Inhibitor of Myeloperoxidase

Clemen, Minkus, Singer, Schulan, von Woedtke, Wende, Bekeschus
Antioxidants, Volume 12, Issue 11, 2023; https://doi.org/10.3390/antiox12111936

Plasmas have been investigated for medical and surface coating purposes for over a decade. In recent years, the idea of using gas plasma-produced components for biochemical modification of, for instance, proteins has become popular, improving processes in biotechnology and green chemistry. Understanding causal relationships between plasma-derived reactive species and protein modifications is essential to enable targeted gas plasma modifications. To this end, we used myeloperoxide (MPO) and five different plasma jet feed gas operating conditions to analyze modifications by high-resolution mass spectrometry. Strikingly, MPO generates reactive species enzymatically, so a decreased production can be related to functional alterations. Indeed, we first-time discovered gas plasma-induced activity reduction of a redox-related enzyme, which was maximally and least affected by argon-oxygen and argon-nitrogen plasma, respectively. Notably, the nitric oxide / peroxynitrite scavenger cPTIO abrogated argon plasma-mediated MPO inactivation, pointing to a pivotal role of these species in enzymatic activity decline that could be exploited using targeted plasma approaches. The overall MP activity decline across the different gas plasma conditions was corroborated by the oxidative protein modification patterns assessed using mass spectrometry, which showed more remarkable similarities between argon and argon-oxygen compared to argon nitrogen conditions.

Can post-plasma CH_4 injection improve plasma-based dry reforming of methane? A modeling study

Matthias Albrechts, Ivan Tsonev, Annemie Bogaerts, Green Chemistry, 26(18) (2024), 9712-9728; https://pubs.rsc.org/en/content/articlehtml/2024/gc/d4gc02889a

When injecting CH_4 post-plasma in plasma-driven dry reforming of methane (DRM), all plasma energy can be used to dissociate CO_2, while CH_4 reforming proceeds post-plasma with residual heat. To assess whether this strategy improves DRM performance, we developed a chemical kinetics model describing the post-plasma conversion process. Our modeling results indicate that below specific energy inputs (SEI) of 220 kJ mol−1, the total conversion slightly improves (ca. 5%) when injecting CH4 post-plasma. However, the energy conversion efficiency (ECE) is slightly lower due to the low H_2 selectivity caused by substantial H_2O formation. The highest conversion and ECE are obtained at SEI values of 240–280 kJ mol−1, where post-plasma CH_4 injection yields nearly identical results to injecting both CO_2 and CH_4 into the plasma. These results indicate the limited potential of improving the performance of DRM by pure CO_2 plasma with post-plasma CH_4 injection. Nevertheless, the approach is still very valuable to allow higher CH_4/CO_2 ratios without problems of coke formation within the plasma, and thus, to improve plasma stability and reach higher syngas ratios, which is more useful for further Fischer–Tropsch or methanol synthesis.

Career Opportunities

Please submit your notices for Career Opportunities to editor@iltpcnewsletter.org.

TENURE-TRACK FACULTY POSITIONS IN MECHANICAL AND AEROSPACE ENGINEERING

The Department of Mechanical and Aerospace Engineering at the University of Alabama in Huntsville invites applications for two tenure-track Assistant Professor positions. The positions will be in:

1. aerospace engineering including propulsion and power, spacecraft design, orbital mechanics, aerodynamics, or unmanned systems and
2. plasma science and engineering.

Applicants should have an earned Ph.D. degree in Aerospace Engineering, Mechanical Engineering, Materials Science and Engineering, or a related field. We seek candidates who demonstrate the potential for scholarship supported by external funding through grants and contracts, a commitment to student success at both the undergraduate and graduate levels through teaching and mentoring, and a desire to contribute proactively to university and professional service while contributing to the breadth of the UAH academic community.

Candidates with significant academic records may be considered for a position at the associate professor level.

APPOINTMENT DATE: August 2025

ABOUT THE DEPARTMENT: The Department offers BS degrees in Mechanical Engineering and in Aerospace Engineering, and an MS and Ph.D. in Mechanical Engineering and Aerospace Systems Engineering. Our faculty is comprised of 20 tenure-track/tenured members and 5 full-time non-tenure-track members. Our undergraduate student body is comprised of 746 aerospace engineering students and 610 mechanical engineering students. We have 239 graduate students in both disciplines. Our faculty's research interests include materials for aerospace applications and for energy storage, gas turbine heat transfer, electrochemical energy conversion and storage, design and control of unmanned systems, applications of smart materials, and computational fluid dynamics applied to low-speed combustion and fire applications, fluid-structure interactions, high-speed aerodynamics, and advanced manufacturing processes. In addition to its nationally known educational and research activities in rocket propulsion, the Department is engaged in a wide range of research activities currently funded by NSF, DOD, NASA, DOE, USDA, the State of Alabama, and several corporate sponsors.

ABOUT THE COLLEGE: The College of Engineering is comprised of five departments and has the largest enrollment of the university's six academic colleges. The research focus in the college includes three of several National Academy of Engineering (NAE) grand challenge problems - secure cyberspace, restore and improve urban infrastructure, and engineer tools of scientific discovery. Our strategic Flight Plan 2032 seeks to enhance student-centered teaching and learning focused on student success, promote basic and applied research, while engaging the local and regional community through outreach and workforce development.

ABOUT THE UNIVERSITY: The University of Alabama in Huntsville is one of America's premier doctoral-granting, comprehensive universities known for addressing some of the world's greatest technological challenges. UAH, a part of The University of Alabama System, offers an environment where students are able to explore, discover, create, and communicate knowledge. With six academic colleges, a Graduate School, an Honors College, more than 100 areas of study, and 17 high-tech research centers, UAH is a Carnegie R1 top-tier research university. UAH is where technology and human understanding converge and prepare students to transform their future. Learn more at www.uah.edu.

ABOUT HUNTSVILLE: Defense, space, telecommunications, biotechnology, diversified manufacturing and a variety of emerging specialties provide challenging work in Huntsville, also known as the Rocket City. The area enjoys a favorable cost of living and quality of life in the Southeast. More than 1.2 million people reside in the Huntsville metro area, and it is now the largest city in Alabama. From outdoor recreational activities to an enhanced arts and entertainment community, Huntsville contributes to a wonderful way to live, work, and play. Learn more at www.huntsville.org.

APPLICATION PROCEDURE AND DEADLINE: Application materials (in pdf format) including a cover letter, curriculum vitae, contact information (including name, address, email address and phone numbers) for at least three references, separate statements of research plans and teaching interests. These documents should be sent via email to: maesearch@uah.edu

Please refer to log number: 25-26-278 for the position in Aerospace Engineering and 25-26-277 for the position in Plasma Science and Engineering.

The University of Alabama in Huntsville is an affirmative action/equal opportunity employer of minorities/females/veterans/disabled.

Contact:
Prof. Gabe Xu
The University of Alabama in Huntsville
Mechanical and Aerospace Engineering
Gabe.Xu@uah.edu

Quantemol is seeking a Computational Physicist

Job Type: Full-time, Permanent
Location: UK (In-person meetings in London 2-4 times a month)
Salary: TBD

About us:
Quantemol is a leader in the plasma chemistry market for advanced software tools and consultancy services. Founded in 2004, we have established a global reputation for delivering cutting-edge simulation software, comprehensive databases, and tailored consultancy services that empower researchers and industries to understand and optimise plasma processes.

Job Description:
We are seeking a highly skilled Computational Physicist with a strong background in plasma modelling and scientific programming (FORTRAN, C++ etc.). The successful candidate will play a crucial role in shaping the development of a new complex simulation code.

Responsibilities:
- Undertake core scientific research and development at Quantemol
- Develop, maintain and optimise plasma codes
- Perform code validation and verification
- Work within a small team to ensure code modules successfully interface
- Document code development
- Analyse simulation outputs and provide insights
- Stay up-to-date with the latest developments in low-temperature plasma physics and computational modelling

- Construct plasma chemistry sets and perform plasma simulations
- Participate in customer meetings and presenting at international conferences

Requirements:

- In-depth Knowledge of gas collision physics. Experience developing particle collisions with cross-section data and Monte Carlo Particle Simulation
- Extensive experience in plasma physics and modelling (low-temperature plasma physics a plus)
- Proficiency in compiled programming languages such as FORTRAN, C++ or comparable
- Experience in a Linux environment
- Ability to work independently and manage your own time effectively
- Strong communication skills
- PhD in plasma physics or closely related field

What We Offer:

- Competitive salary
- UK Visa sponsorship, if necessary
- Opportunities for professional development
- Stimulating work environment with a focus on research and innovation
- The ability to make a large impact and help shape a small company

Quantemol is a scientific software and consultancy company with an international customer base and a small, friendly team of experts based in the UK. We provide plasma modelling solutions to the semiconductor industry and others. Our products are complicated, but the results of your work have a real impact. We facilitate innovation that can change the world. Join us on this journey!

To apply please send your CV outlining your experience and qualifications to recruitment@quantemol.com

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Collaborative Opportunities

Please submit your notices for Collaborative Opportunities to editor@iltpcnewsletter.org.

Disclaimer

The content of this Newsletter comes from the contributions of members of the ILTPC. The Newsletter editors are attempting to provide as inclusive a newsletter as possible by publishing contributions from all members of the ILTPC. However, the editors may limit contributions of individual research groups to any single issue. The editors do reserve the right to not publish contributions that they deem as not being appropriate. The Newsletter editors may do some light editing of the original submissions to maintain a consistent tone

and style. The editors expect that submitting contributors have permission to share images. Inclusion of items in the Newsletter should not be interpreted as an endorsement by the editors nor as an advertisement for commercial purposes.

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