International Low Temperature Plasma Community

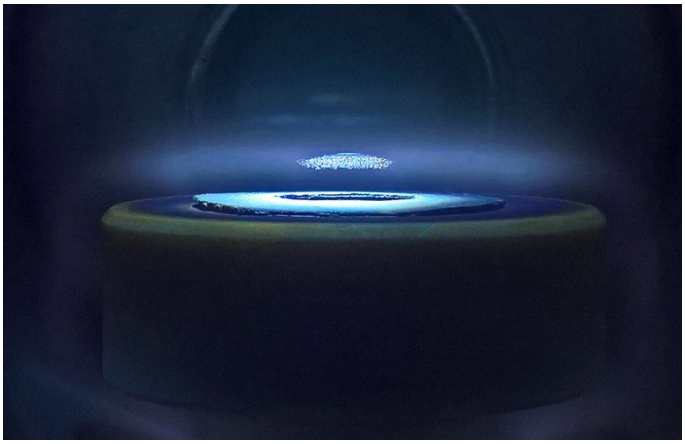
https://mipse.umich.edu/iltpc.php, iltpc-central@umich.edu

Newsletter 01

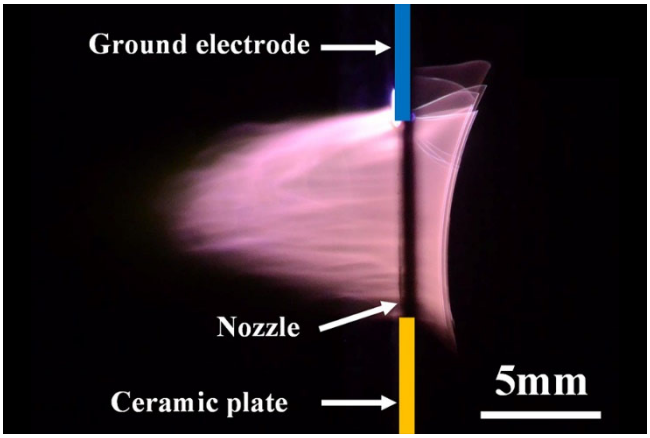
29 April 2020

Images to Excite and Inspire!

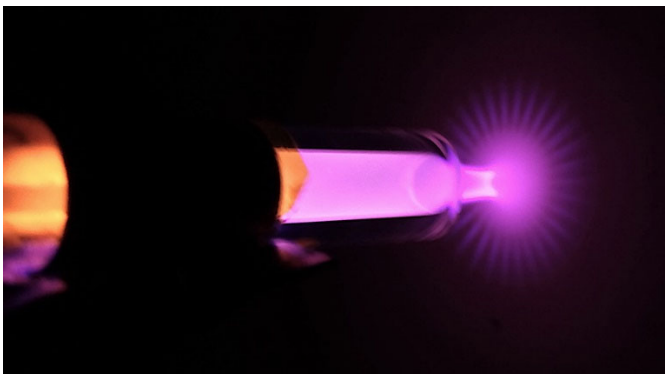
Thank you for submitting your images, some of which are shown here. Those images already submitted will appear in later Newsletters. Please do send your images (with a short description or source) to iltpc-central@umich.edu.



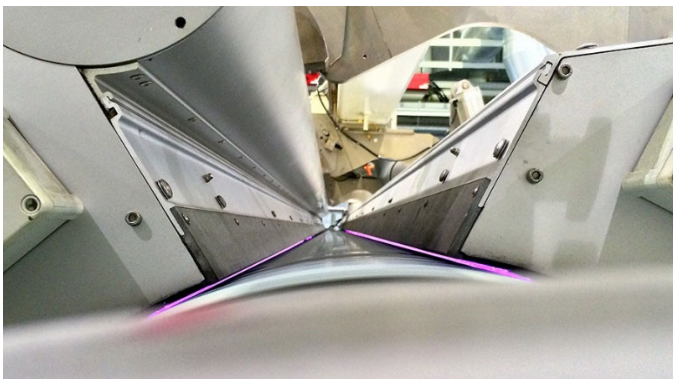
Levitation of dust particles in a butane rf plasma in the context of studies of interstellar dust analogs. (More about our project: https://doi.org/10.1093/mnras/sty2497.) Image credits: Iasi Plasma Advanced Research Center (IPARC), https://www.plasma.uaic.ro/.
Dr. Ionut Topala, ionut.topala@uaic.ro.



A low temperature air plasma jet based on a rotating electrode. The device can be used for surface treatment, plasma chemistry, plasma medicine applications and studying the mechanism of air glow discharges. Z. Li, J. Liu, X. Lu, Plasma Sources Sci. Technol. **29**, 045015 (2020). **Prof. XinPei Lu**, **HuaZhong**, University of Sci. & Tech. luxinpei@hust.edu.cn, luxinpei@hotmail.com.



Helium Atmospheric pressure plasma jet "blooming" towards the surface of a thick glass-ceramic block (macor). 1 slm helium flow, -10kV, 2us DC square pulse width, 10 mm tube-outlet glass-ceramic distance.
Dr. Sylvain Iséni, GREMI, CNRS/Univ.-Orleans, sylvain.iseni@univ-orleans.fr.



This image shows 2 electrodes, 8.72 m long, discharging with 96 kW each against an isolated roller (DBD) in ambient air, used in a BOPP production plant, Source: SOFTAL Corona & Plasma GmbH, Germany. **Dr. Florian Brehmer**, Brehmer@AFS.biz, www.afs.biz.

In this issue:

Call for Contributions

Please submit content for the next issue of the Newsletter. Please send your contributions to iltpc-central@umich.edu by **May 10, 2020**.

General Interest Announcements

The ILTPC is maintaining a list of LTP conferences. With many meetings being canceled and rescheduled, we thought this would be useful for minimizing conflicts and planning future trips. The data may not be 100% accurate, so please let us know of changes in conference scheduling. A view-only link to the schedule is:

https://docs.google.com/spreadsheets/d/1XoD6Fn7AP0HFTQJpPCETrRIQhx8IDisz4XUMyv9X7zo/edit?usp=sharing.

Contact:
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iltpc-central@umich.edu

Meetings and Online Seminars

- **ISPC 25**

  Due to the unknown mid-term outcomes of the COVID-19 pandemic, the Board of Directors of International Plasma Chemistry Society (IPCS) has decided to postpone the 25th International Symposium on Plasma Chemistry to be held in Kyoto (http://www.ispc25.com). The meeting, originally scheduled in May 2021, will be held instead 15-20 May 2022.

  Contact:
  Prof. Sylvain Coulombe
  sylvain.coulombe@mcgill.ca

- **International Online Plasma Seminar (IOPS)**

  The Plasma Technology Group of the Ruhr-University Bochum, Germany, organizes the International Online Plasma Seminar (IOPS) and would like to encourage members of the ILTPC to attend and to actively contribute to it. The IOPS is a free international online lecture series on LTP science. International experts present original research results as the basis for scientific discussion and exchange during 30 - 45 min talks. After the presentations questions from the audience are discussed. Speakers and audience can attend from anywhere in the world at no cost and without traveling. In this way researchers, especially students, can access state-of-the-art scientific presentations in LTP science, which are otherwise only available at conferences, at no cost and without generating CO2 emissions. During the current Corona pandemic the IOPS provides a unique opportunity for international scientific exchange, while all classical conferences are cancelled.

  The current IOPS program can be found at: https://mipse.umich.edu/online_seminars.php
  Presentations begin at 3 pm CET/9 am EST on Thursdays.

  The idea of the IOPS is based on active participation, i.e. the attendees' research groups are expected to contribute presentations and to ask questions. Speakers can be nominated at any time by contacting **Prof. Dr. Julian Schulze** (schulze@aept.rub.de). Nominations should include the speaker's name, affiliation, contact information, and a short description of the work to be presented including a tentative title of the presentation.

  The seminar is delivered via Zoom. To join the seminar, please use this link:
  https://ruhr-uni-bochum.zoom.us/j/93889931395?pwd=bFN5dU14RHRMYU5ySW40V1gvbDJpZz09.

- **Journal of Plasma Physics Seminar Series**

  The JPP (Journal of Plasma Physics) is holding a weekly Zoom colloquium at 8:00 AM US Pacific Coast Time on Wednesdays with participation from all over the world. To sign up for notifications of the seminars, please visit https://www.quicktapsurvey.com/survey/6a16b4564dd07c8a59d1a25f6024f9fc .

  Contact:
  Prof. William Dorland
  bdorland@umd.edu

- **International Student Competition**

  We would like the ILTP community to join and work out an initiative for an international student competition we are setting up with the chair of Pisa/JRC (September) and Bochum /TUe (November) below. The Pisa workshop is purely focused on Healthcare & Life Sciences (HLS) and NanoBio. The Bochum workshop can address HLS too but also more industrial / environmental / plasma cleaning.

  Science & Entrepreneurship Workshops scheduled:

  - 3 & 4 September 2020
    5th HealthCare & Lifesciences (HLS) and NanoBio, University of Pisa
    Chairs Serena Danti, Pascal Colpo and Hugo de Haan
  - 2 &3 November 2020
    7th Plasma, RUB Bochum, Chairs Achim von Keudell (RUB), Guus Peemen (TU/e) and Hugo de Haan

  Contact:
  Dr. Hugo de Haan
  Vision Dynamics
  Hugo.deHaan@visiondynamics.nl

Community Initiatives and Special Issues

- Special Issue on the Application of LTP in Biomedicine for *Frontiers in Physics*

  Drs. Mounir Laroussi (Old Dominion University), **Michael Keidar** (George Washington University), and **Vladimir Kolobov** (CFDRC) are guest editing a Special Issue on the *Application of Low Temperature Plasma in Biomedicine* for *Frontiers in Physics*. The deadline for manuscripts submission is **October 15, 2020**. The link to the special issue is: https://www.frontiersin.org/research-topics/12731/low-temperature-plasma-for-biomedical-applications

Research Breakthroughs

- **The Discovery of a New Anion. After all, Negative Methane Ion Exists and Is Very Stable**
  For a discussion, follow this link: https://mipse.umich.edu/iltpc/Hinojosa-ILTPC-2020.pdf

  "Solving the CH_4^- Riddle: The Fundamental Role of Spin to Explain Metastable Anionic Methane", Alejandro Ramírez-Solís, Jacques Vigué, Guillermo Hinojosa, and Humberto Saint-Martin, Phys. Rev. Lett. **124**, 056001 (2020). https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.124.056001

  Contact:
  Dr. Guillermo Hinojosa-Aguirre
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New Resources

- Recently, Journal of Physics D: Applied Physics - 'Advances in Plasmas for a Sustainable Future' Programme has published three new special issues:
  - **Plasmas in electrical-to-chemical energy conversion technologies**
    https://iopscience.iop.org/journal/0022-3727/page/Special-Issue-on-Plasmas-in-Electrical-to-Chemical-Energy-Conversion-Technologies
  - **Nitrogen fixation in plasma: From fundamentals to sustainability**
    https://iopscience.iop.org/journal/0022-3727/page/special-issue-on-nitrogen-fixation-in-plasma
  - **Plasmas in agriculture and the food cycle**
    https://iopscience.iop.org/journal/0022-3727/page/special-issue-plasmas-food

  Contact:
  Prof. Xin Tu
  University of Liverpool
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- **New eBook on LTP Applications in Medicine**

  Dr. Mounir Laroussi (Old Dominion University) is the editor of an upcoming ebook titled "Cold Plasma: Characteristics and Applications in Medicine". The book is expected to be available by late May-early June 2020. It is published by MDPI, Basel, Switzerland.

  Contact:
  Prof. Mounir Laroussi
  Old Dominion University
  mlarouss@odu.edu

Career Opportunities

- **Postdoctoral Position in Experimental Plasma Science and Engineering, University of Minnesota**

  This position is to participate in research focused on plasma-liquid interactions, material synthesis and laser diagnostics. We are looking for a postdoctoral researcher with a recent Ph.D. degree in plasma science, engineering, or closely related field with experience in optical plasma diagnostics and plasma source design. The postdoctoral researcher should have excellent oral and written communication skills and the ability and desire to supervise graduate students and collaborate with a team of multidisciplinary researchers.

  Applicants should send a cover letter (including date applicant is available), CV, and reprints of 3 representative publications to **Prof. Peter Bruggeman** (pbruggem@umn.edu).

- **Postdoctoral Position in Computational Plasma Science and Engineering, University of Michigan**

  A postdoctoral research fellow (PDRF) position in computational low temperature plasmas (LTPs) is available in the research group of Prof. Mark J. Kushner at the University of Michigan, Ann Arbor, MI, USA. The position entails development and application of computer models for low temperature plasmas, plasma chemistry and plasma surface interactions, plasma liquid interactions, and nano-scale modeling of surface evolution for microelectronics fabrication. The PDRF will work on several projects in these areas. The PDRF should have expertise in the fundamental processes of LTPs, plasma chemistry, and plasma surface interactions, and expertise in developing and maintaining parallel computer models for LTPs using high level languages, including Fortran. An experimental background with a desire to learn computations can be discussed. Excellent oral and written communication skills are desired. The PDRF will help supervise graduate students; and interact with research colleagues in academia, national laboratories, and industry. More information about the research group is at: http://uigelz.eecs.umich.edu.

  With the current COVID-19 crisis, it is possible to start the position remotely, with later relocation to Ann Arbor. The appointment period for PDRF is usually 2 years, though this can be discussed.

  Applicants should send a cover letter (including date applicant is available), CV, and reprints of representative publications to **Prof. Mark J. Kushner** (mjkush@umich.edu).

Collaborative Opportunities

Please submit your announcements to iltpc-central@umich.edu.

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Plasma Science and Engineering