The George Washington University

NSF Industry/University Cooperative Research Center (IUCRC) for High Pressure Plasma Energy, Agriculture, and Biomedical Technologies

National Science Foundation (NSF), through their IUCRC program, is sponsoring the Center for High Pressure Plasma Energy, Agriculture, and Biomedical Technologies (C-PEAB), a collaboration between George Washington University, Drexel University, and the University of Michigan. C-PEAB is focused on partnerships with industry to jointly investigate basic plasma science in support of their development efforts in energy, agriculture, and biotechnology sectors.

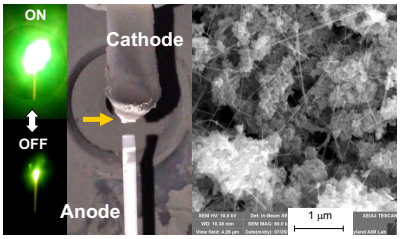
More information about GWU IUCRC site: https://mpnl.seas.gwu.edu/nsf-iucrc/

More information about NSF IUCRCs: www.iucrc.org. More information about C-PEAB: www.c-peab.org

Benefits of Industrial Member: Companies are invited to become members of IUCRC to benefit from research by the Center in the basic science of their technologies, to have access to graduating students and post-doctoral fellows, and to investigate regulatory considerations at the early stage of technology development, one of the focus programs of the Center. The GWU investigators are developing new cold-plasma technologies addressing, for example, cancer treatment, disinfection including COVID-19, novel tissue regeneration techniques, plasma propulsion, plasma-based nanosynthesis and discharge initiation mechanisms.

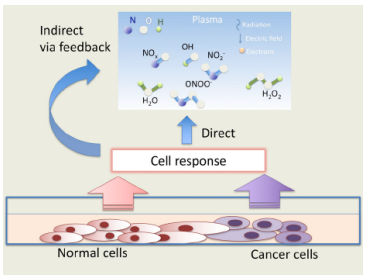
Our current members include companies with interest in non-equilibrium plasmas and their applications in medicine, propulsion, diagnostics, and computer simulations. Advice from regulatory agency mentors, participating in the IUCRC helps the Center prepare protocols for introduction of cold plasma to the global technology market.

We invite representatives of your company to participate in our biannual Industrial Advisory Board (IAB) meeting taking place over 1.5 days as a prelude to formal membership. During the IAB meeting, university researchers present their current projects performed under IUCRC sponsorship. IAB member companies and mentors discuss these

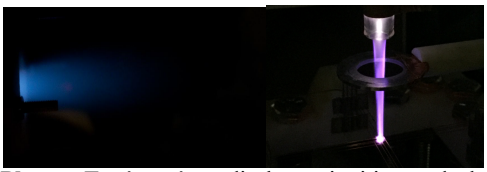


Plasma-based Nanotechnology: Pulsed arcs for synthesis of 2D materials.

Cold Plasma Decontamination of COVID-19.



Plasma Medicine: Adaptive plasmas for cancer therapy and decontamination including COVID-19.



Plasma Engineering: discharge ignition and plasma propulsion.

projects, suggest changes indirection, and vote on funding distribution among the projects. Upon formally joining the IAB, companies have the ability to leverage NSF funding with company membership fees to address research topics aligning with their technology roadmaps. Full ($50,000 annually) and partial ($25,000) memberships are available with the key difference being the ability to vote for projects.

Engagement opportunities: To maximize the impact and return of being a member in the IUCRC, IAB members are invited to participate in a wide range of activities.

- Directly engage with university researchers addressing topics of interest.
- Review progress reports of all projects and of Center level initiatives.
- Participate in quarterly teleconferences with university researchers to advise on science, technology and regulatory issues.
- Participate in the Center's bi-annual, meeting rotating between George Washington University, Drexel University, and University of Michigan (requiring travel expenses and a small registration fee).

Outcomes: Participation in IUCRC activities will augment company development activities with advances in the fundamental science underlying the technology; while considering regulatory requirements. IAB participation gives members access to background IP and the human talent responsible for that IP—our students.

GWU IUCRC LABORATORIES

Micropropulsion and Nanotechnology Laboratory (Prof. Michael Keidar)
BioFluid Dynamics Laboratory (Prof. Michael Plesniak)
Bioengineering Laboratory for Nanomedicine and Tissue Engineering (Prof. Lijie Grace Zhang)
Flight Dynamics and Control Laboratory (Prof. Taeyoung Lee)

Contact: Please contact Dr. Michael Keidar, GWU Site Director, George Washington University by email at keidar@gwu.edu or by phone at (202) 994-6929 to learn how to engage in IUCRC's activities.