

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

If you do not go after what you want, you will never have it.

If you do not ask, the answer will always be no.

If you do not step forward, you are always in the same place.



**7th Spring Plasma School at Port Said, Port
Said, Egypt on 6 -8 March 2022**

Deference Between Large and Small Experimental Plasma Devices

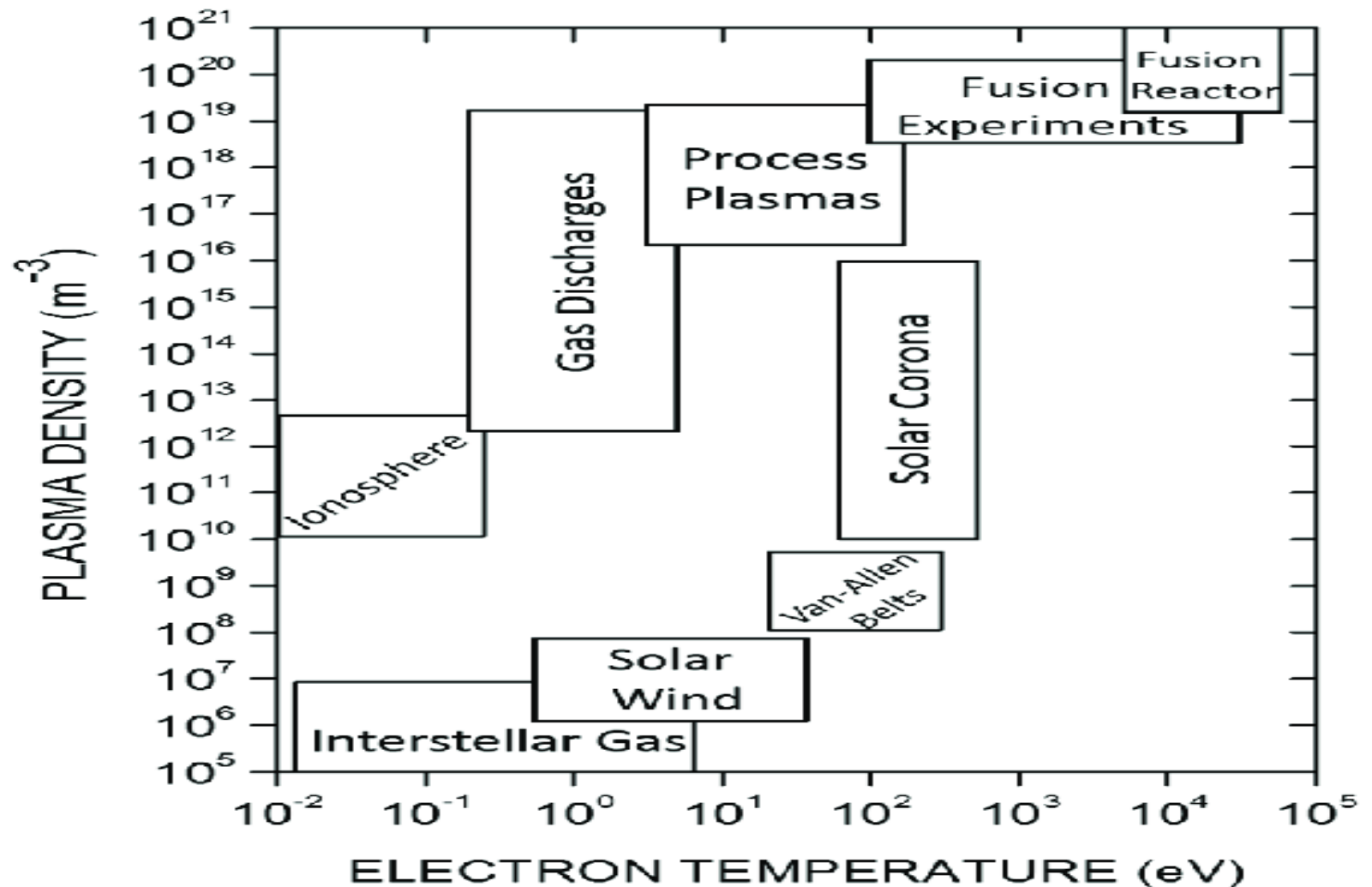
By

Azza Ahmed Talab

EAEA. NRC, Plasma Physics and Nuclear Fusion Dept. – Cyclotron
Project

azza_talab@yahoo.com

Plasma Classification



Low Temperature Plasma (LTP)

High Temperature Plasma (HTP)

Thermal Plasma

$$T_e \approx T_i \approx T \leq 2 \times 10^4 \text{ K}$$

e.g. Arc Plasma at normal pressure

Non-Thermal Plasma

$$T_i \approx T \approx 300 \text{ K}$$

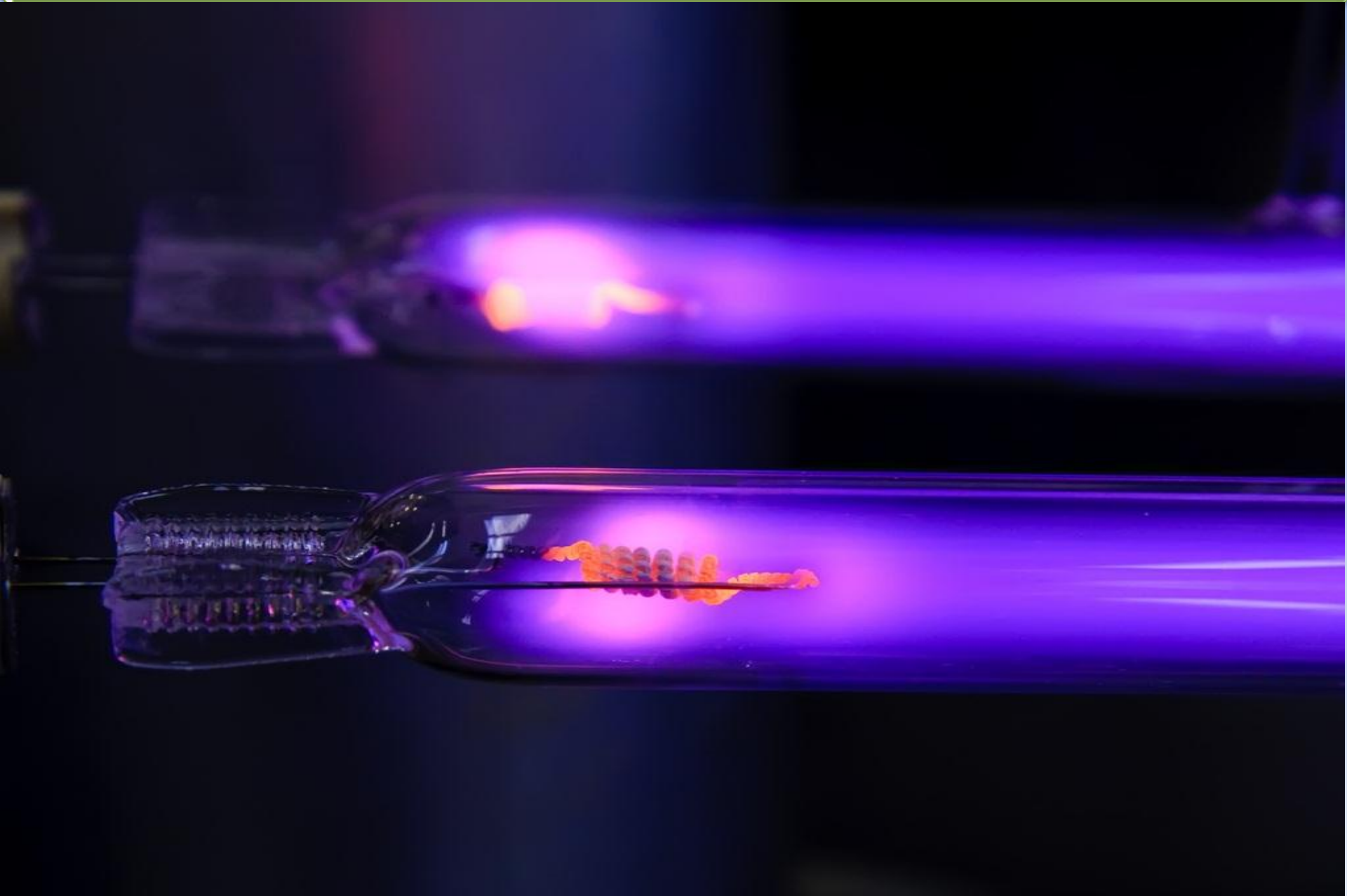
$$T_i \ll T_e \leq 10^5 \text{ K}$$

e.g. Low pressure glow discharge, Barrier discharge, corona, plasma jets

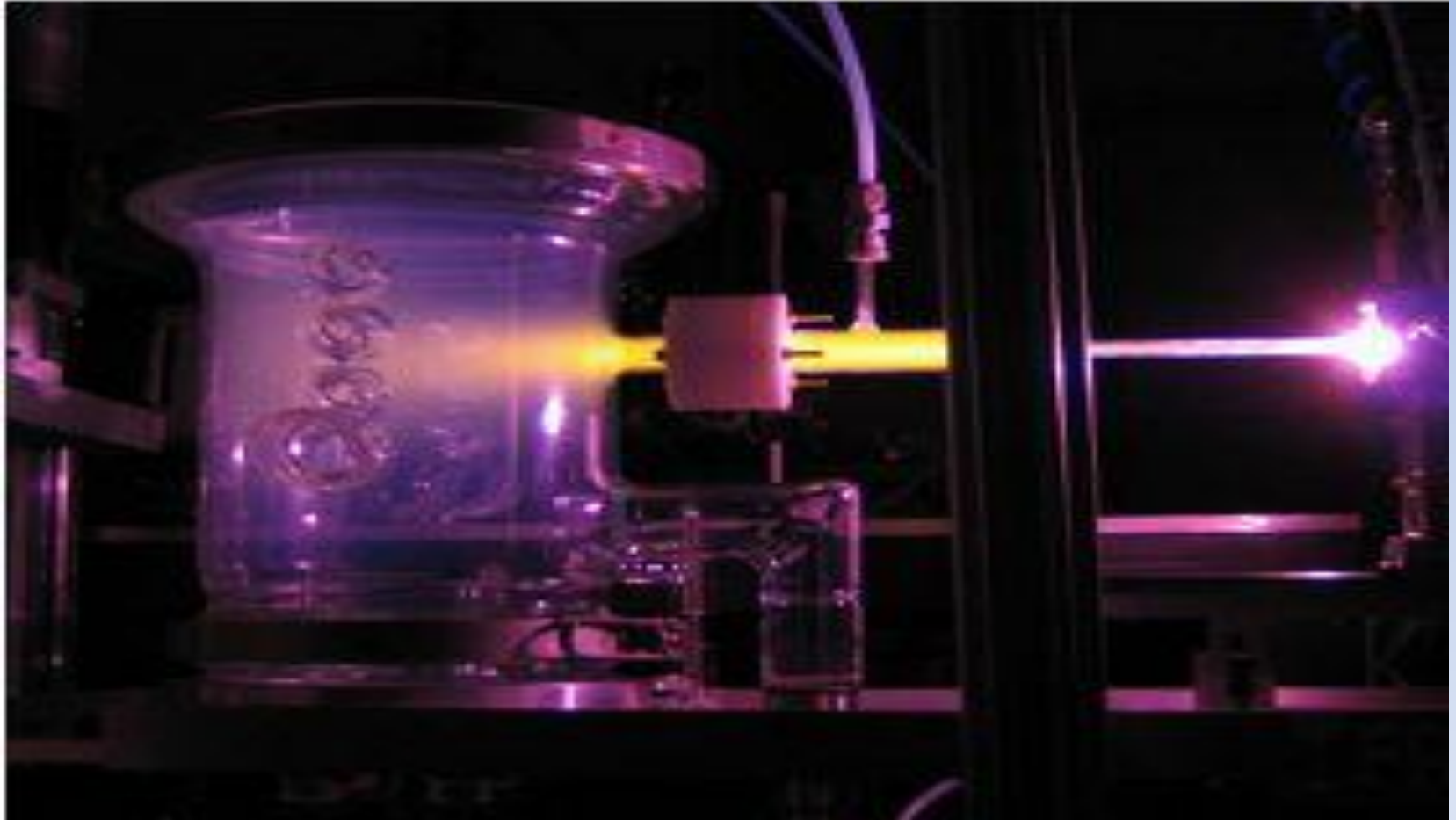
$$T_e \approx T_i \geq 10^7 \text{ K}$$

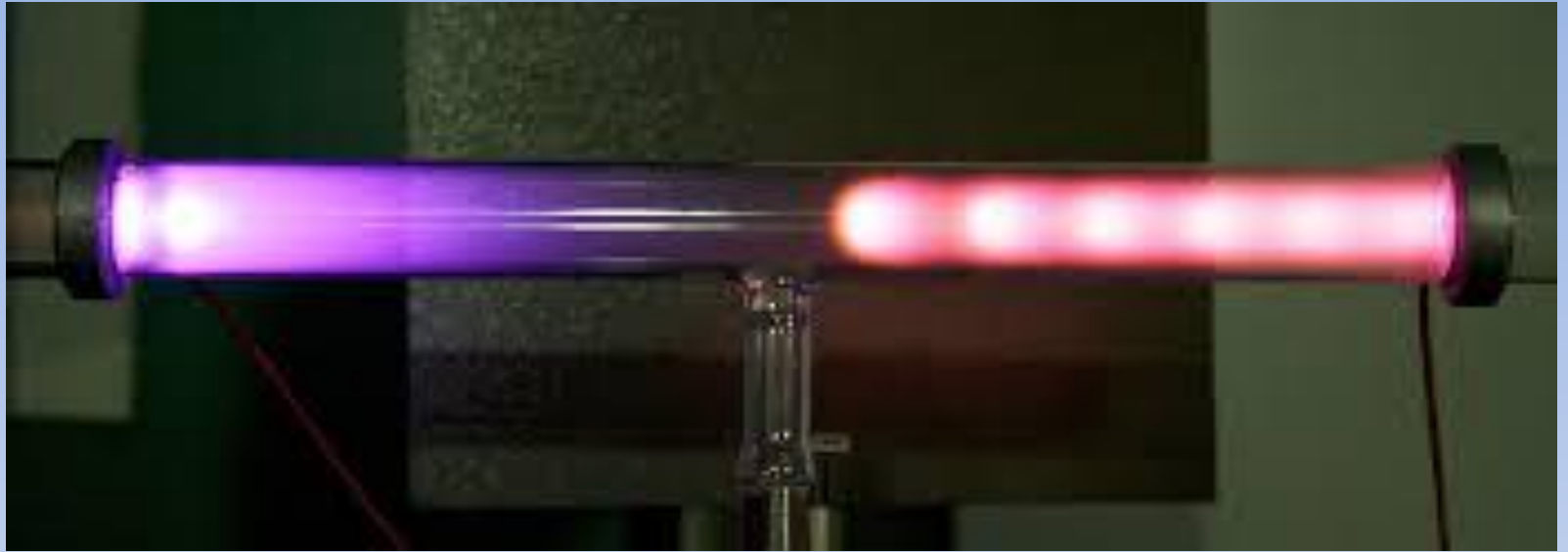
e.g. Fusion Plasmas

Cold Plasma Technology

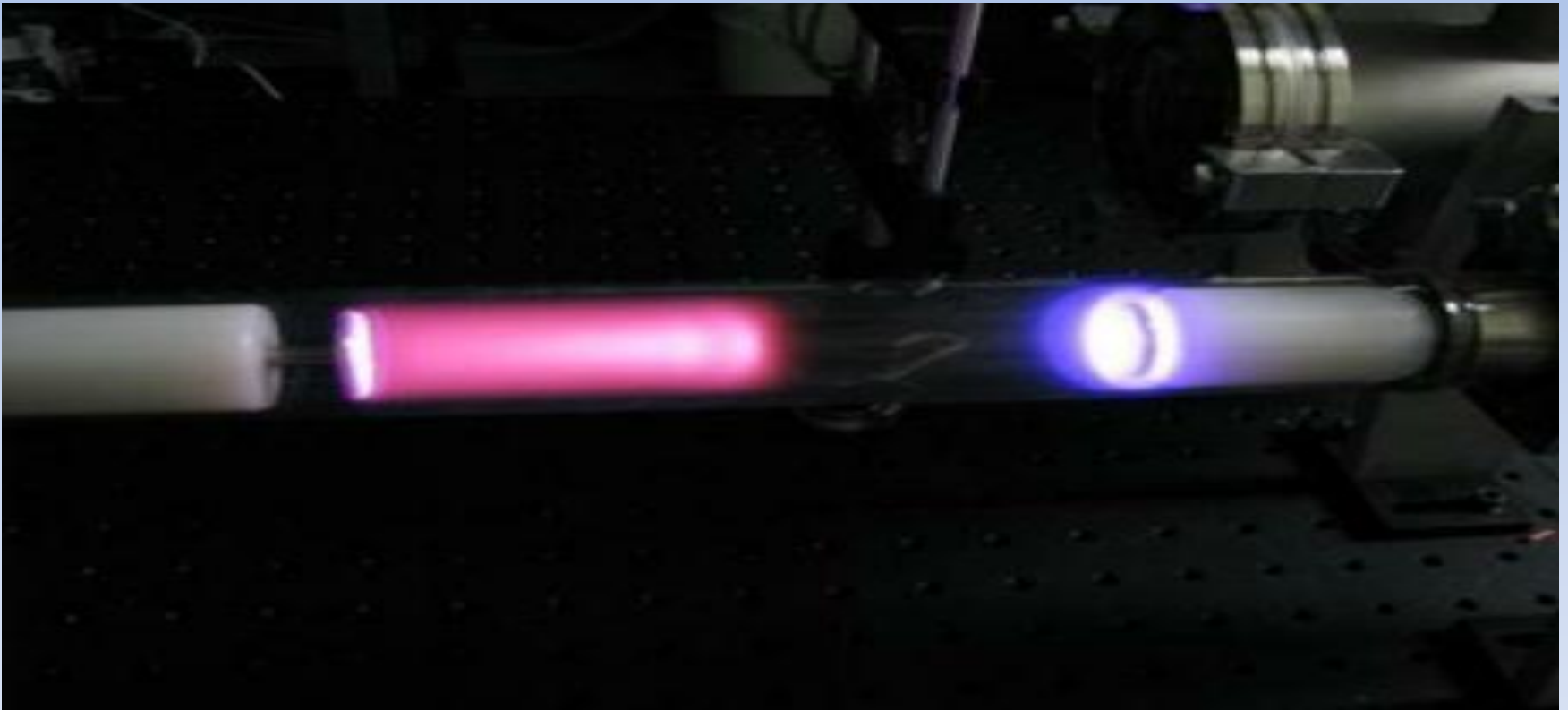


DC Glow Discharge Plasma Experiments

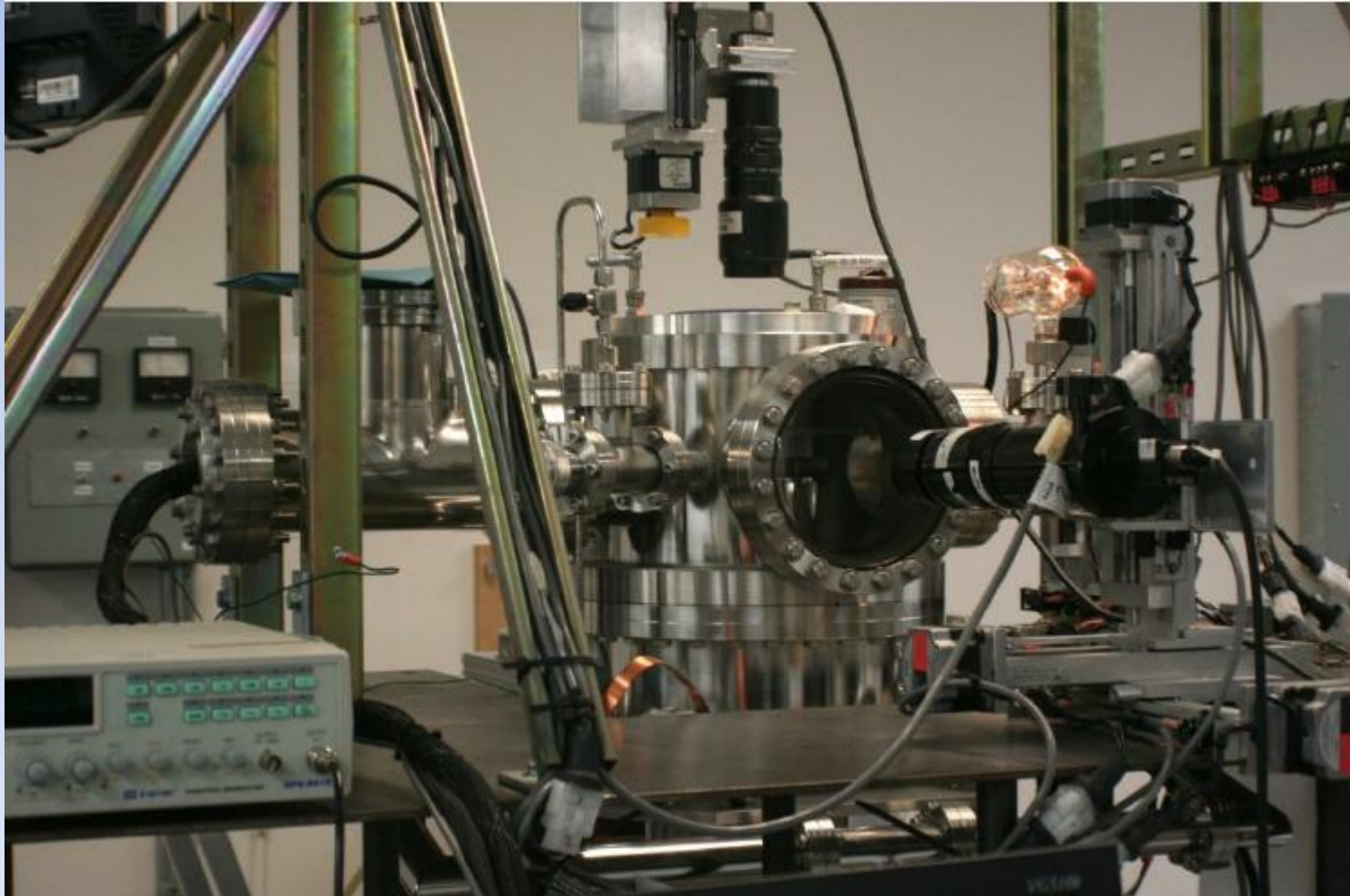




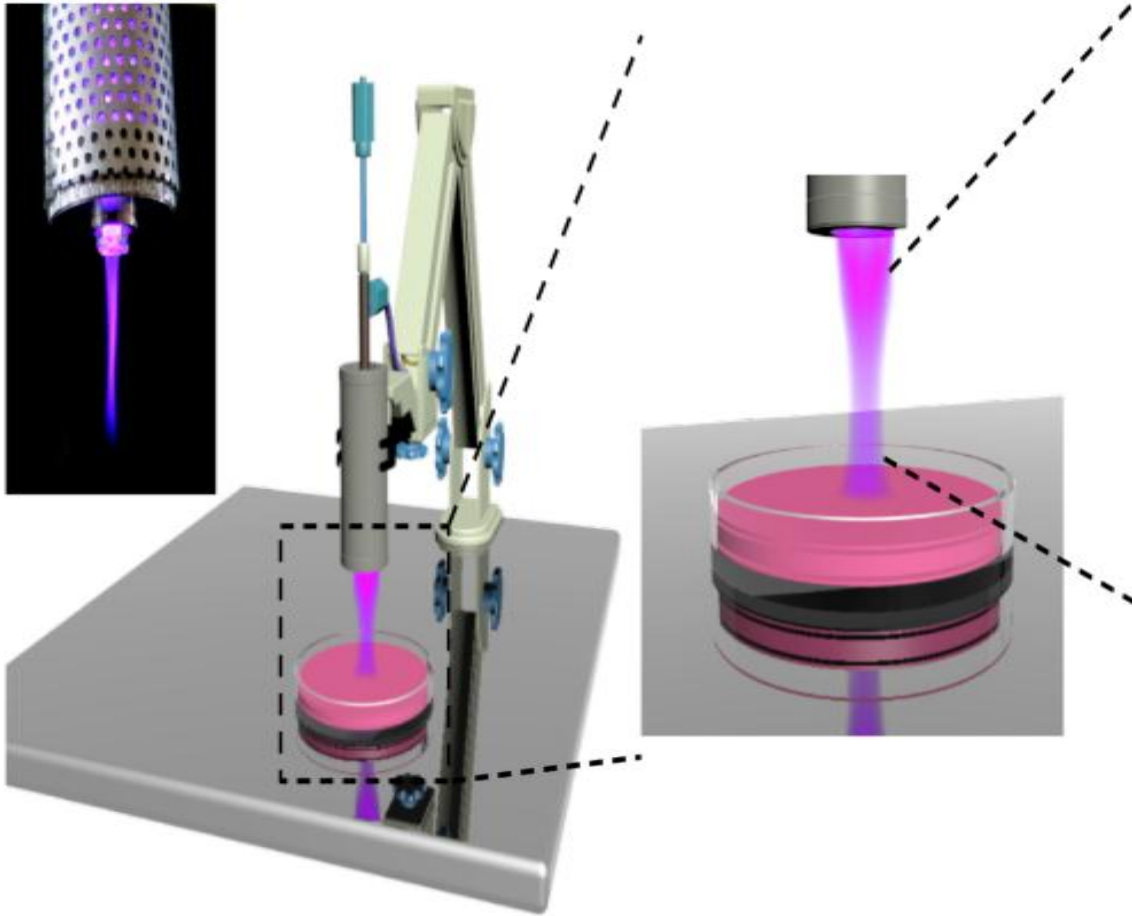
A linear DC glow discharge plasma source. The positive cathode is shown on the right with the negative anode shown on the left. Picture courtesy of Dr. Sylvain Coulombe, McGill University.



Capacitively coupled plasma source belonging to the CASPER Research group at Baylor University.



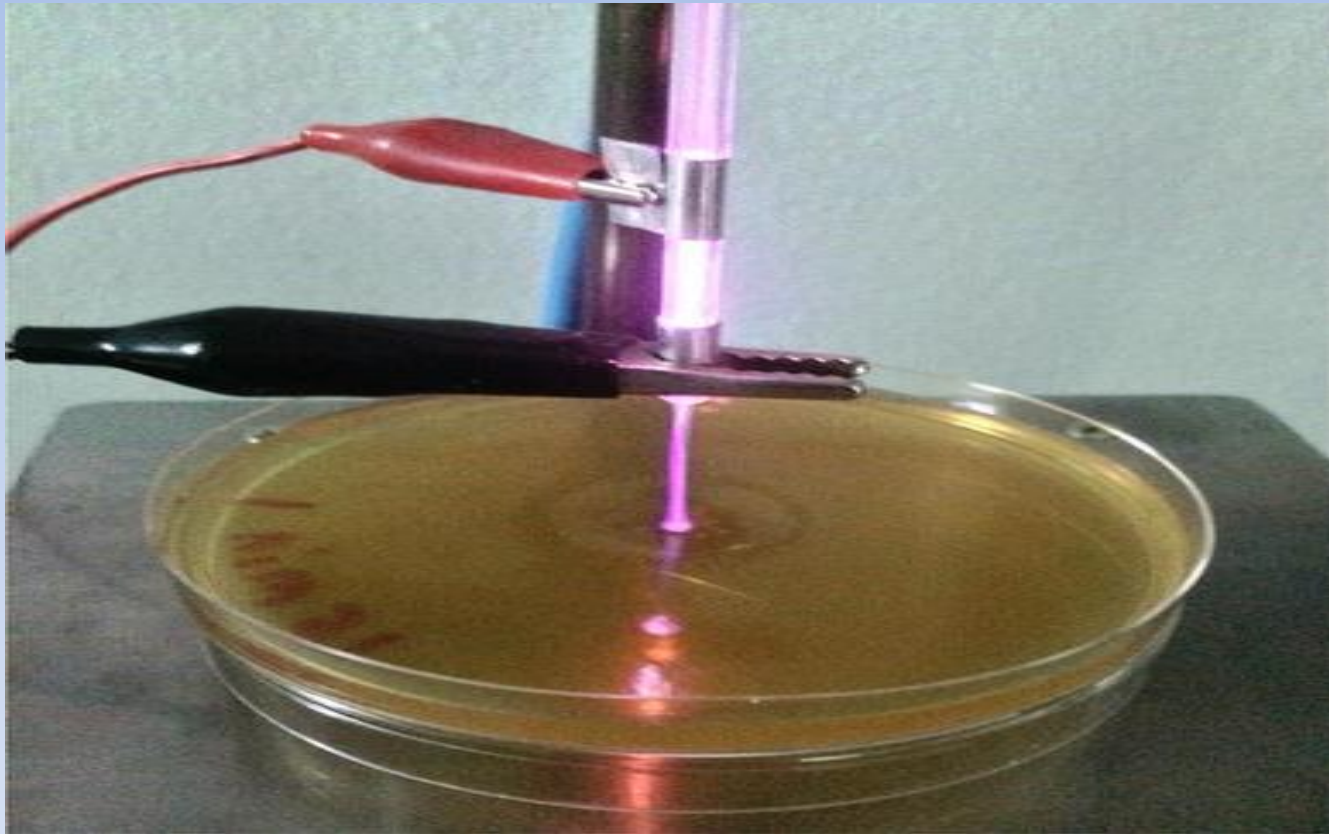
Atmospheric Plasma Jet Experiments



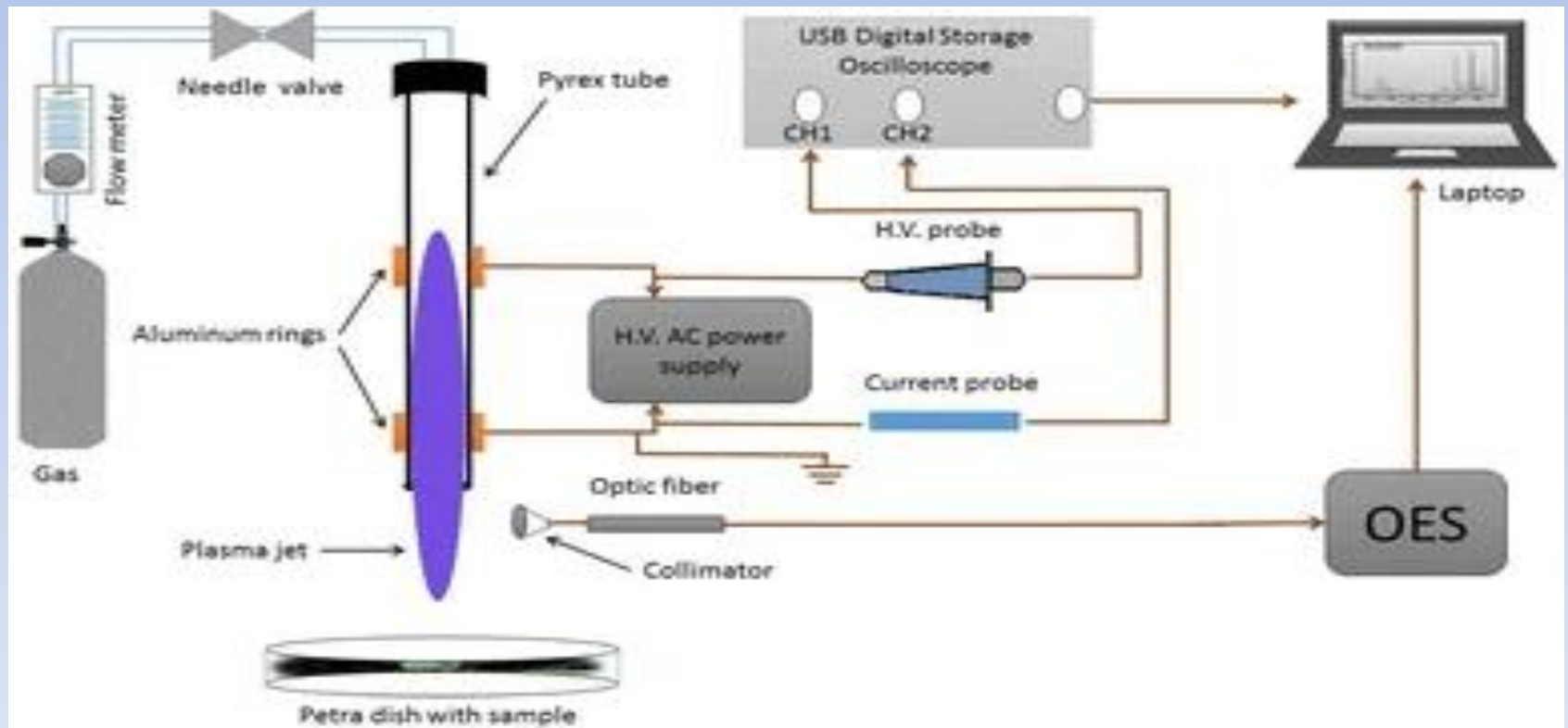
NTP composition:

- radicals and chemical products
- excited species
- electrons
- ions
- UV radiation
- thermal radiation
- electromagnetic fields
- visible light

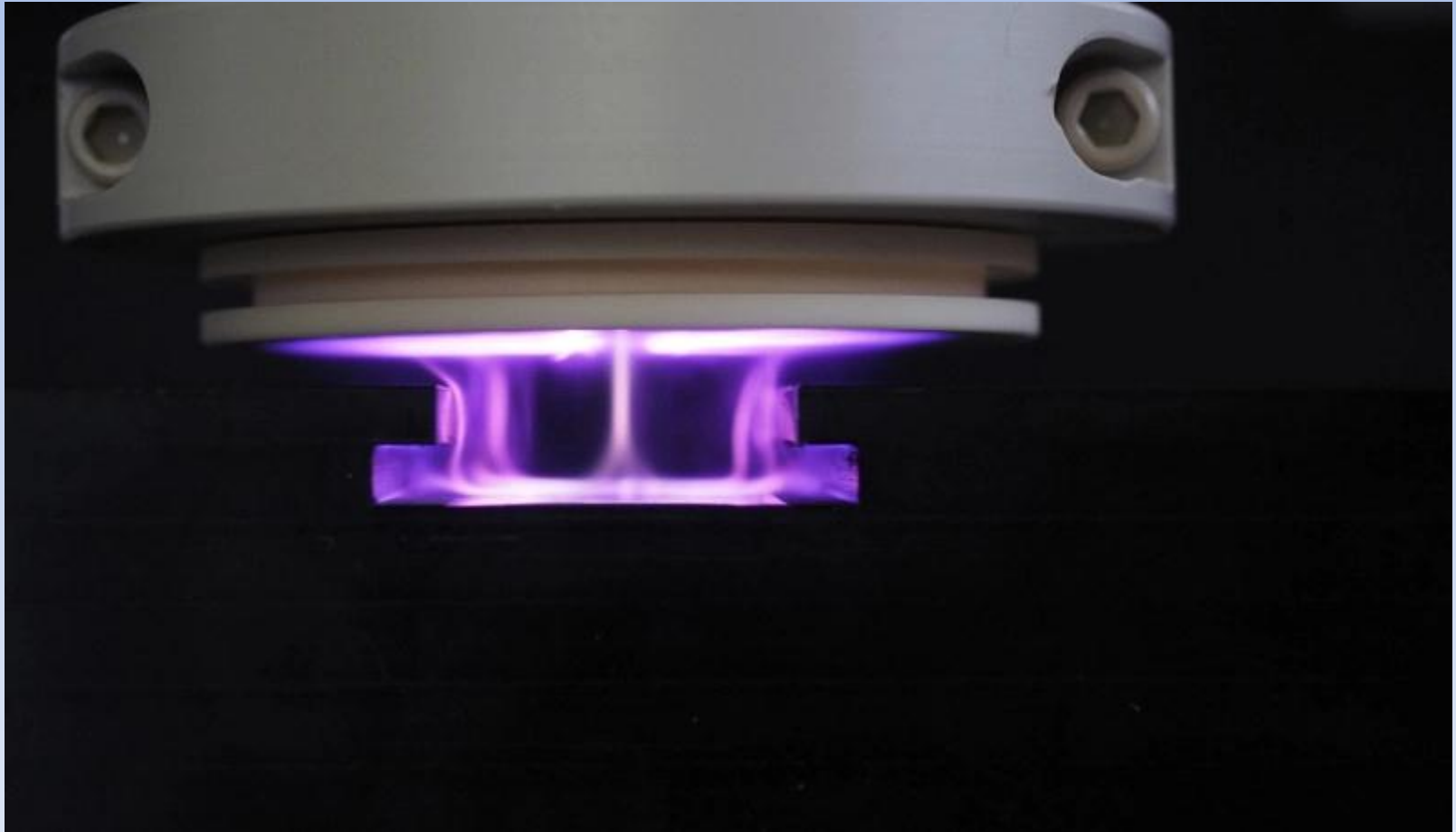
Studying the non-thermal plasma jet characteristics
and application on bacterial decontamination



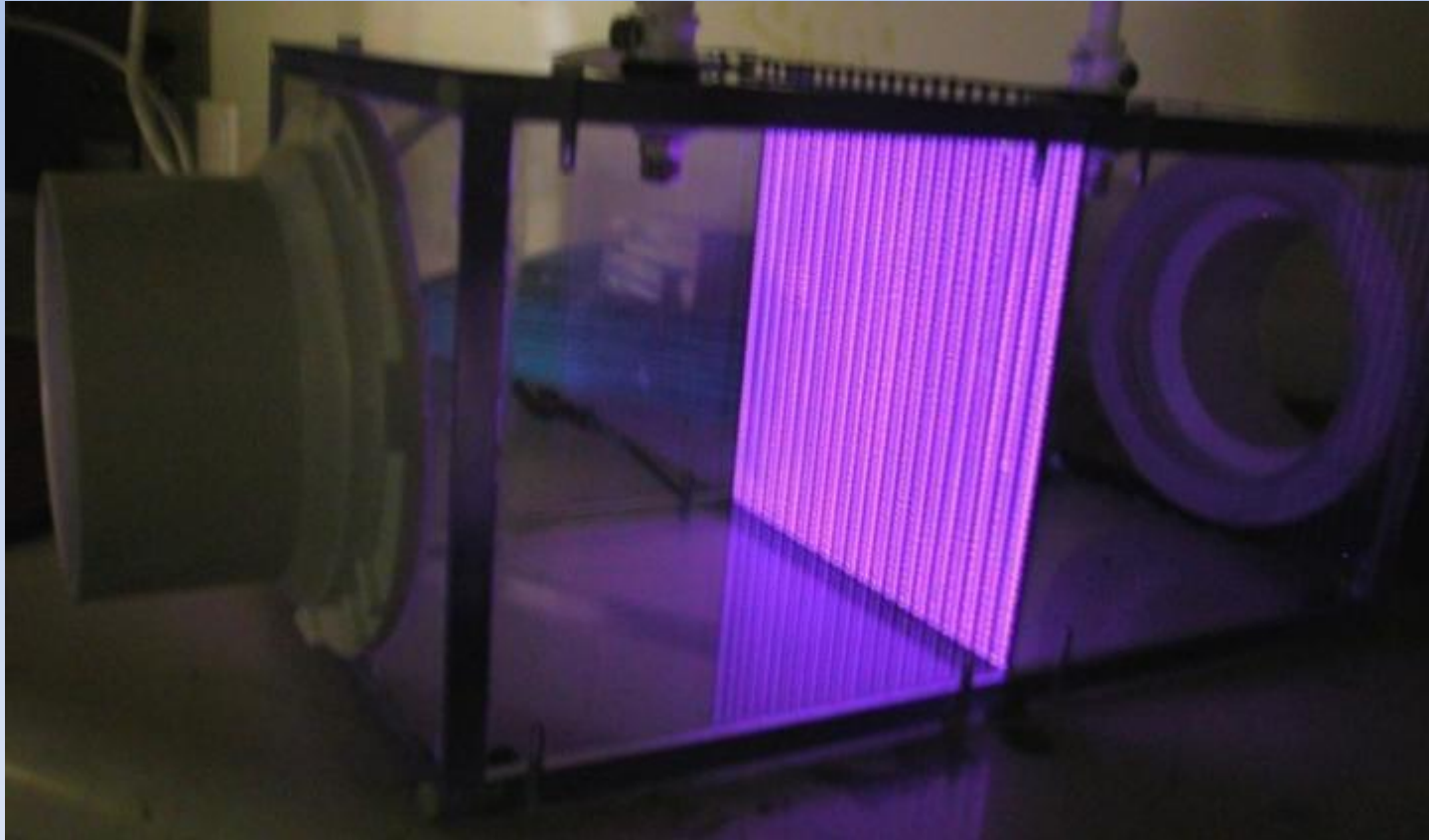
DBD plasma jet system



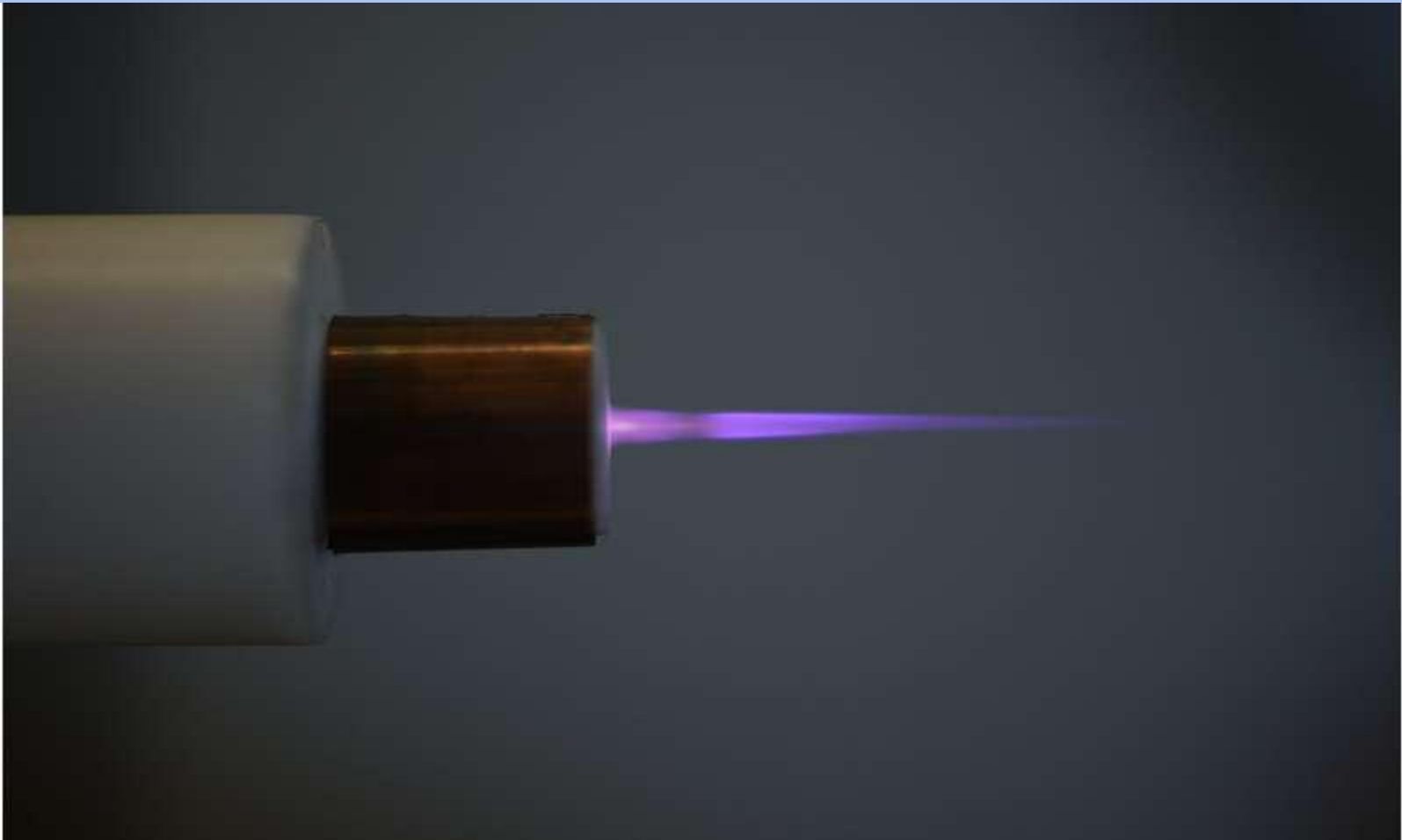
Cold plasma for surface treatment



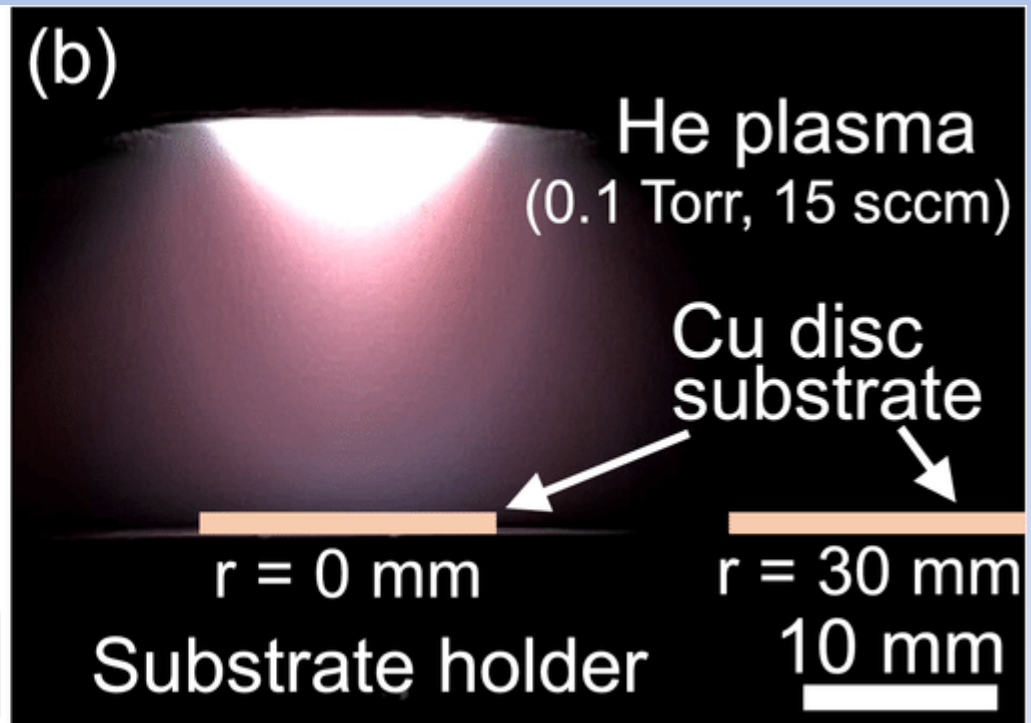
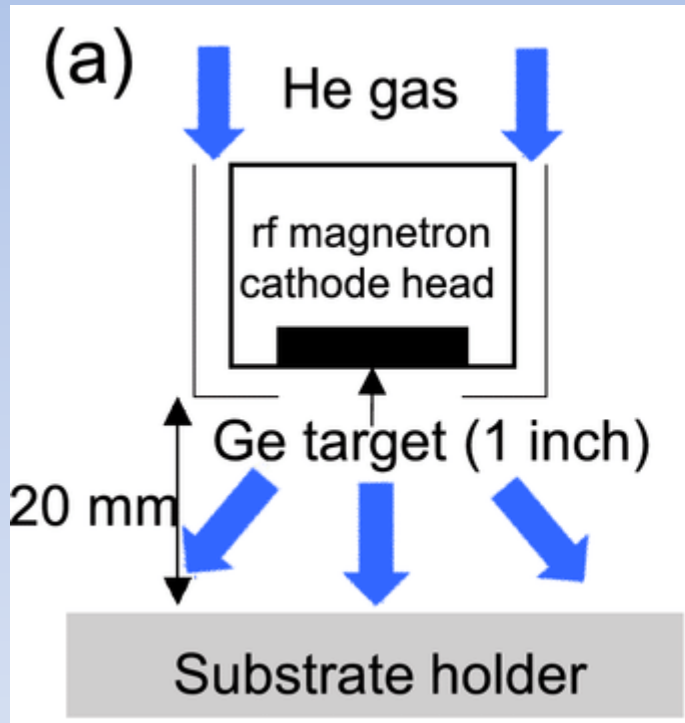
Created for anthrax attacks, cold plasma air filter is being prepped to combat COVID-19



DC voltage cold plasma technology for a safer, more cost-effective approach to sterilize medical tools



Schematic of experimental setup for rf magnetron plasma sputtering and (b) image of plasma emission in front of Ge sputtering target.

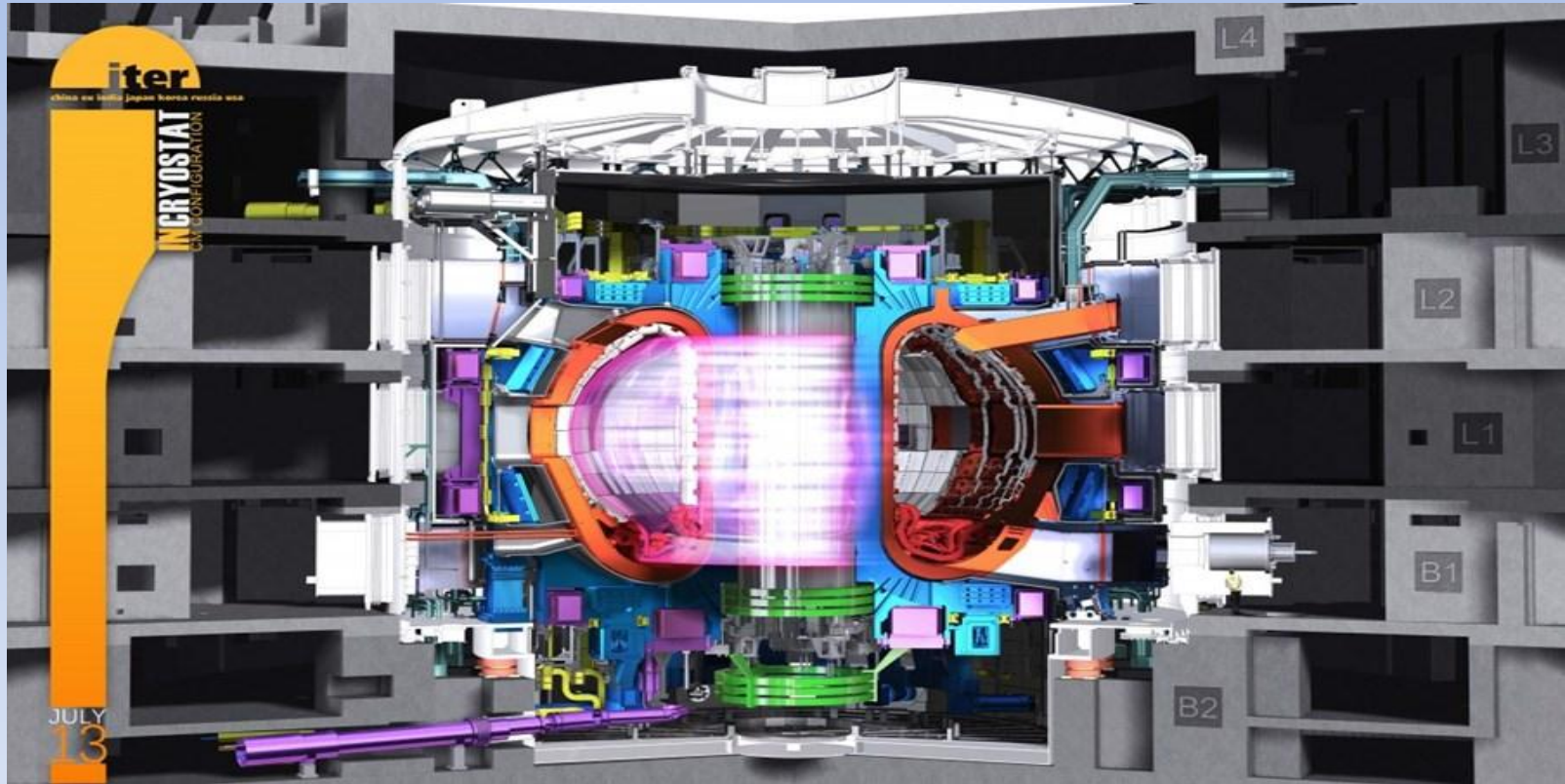


OAUGDPP

- **One Atmosphere Uniform Glow Discharge Plasma electrically breaks down air at standard pressure & ambient temperatures, creating highly reactive chemical species.**
- **It can be used for a variety of applications such as Air Purification , Biotechnology , Flow Control , Disinfection etc.**



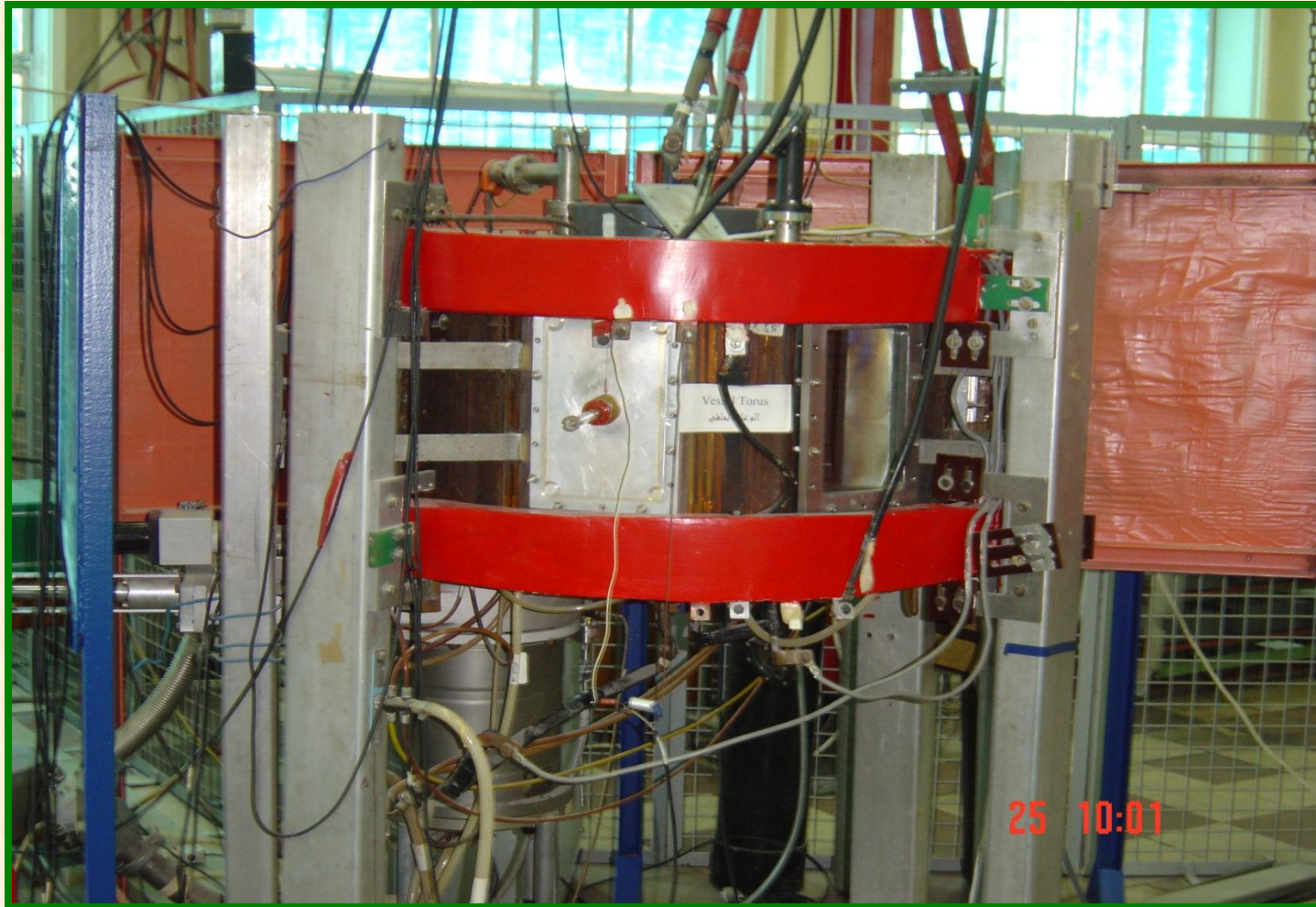
Thermal Plasma Experiments



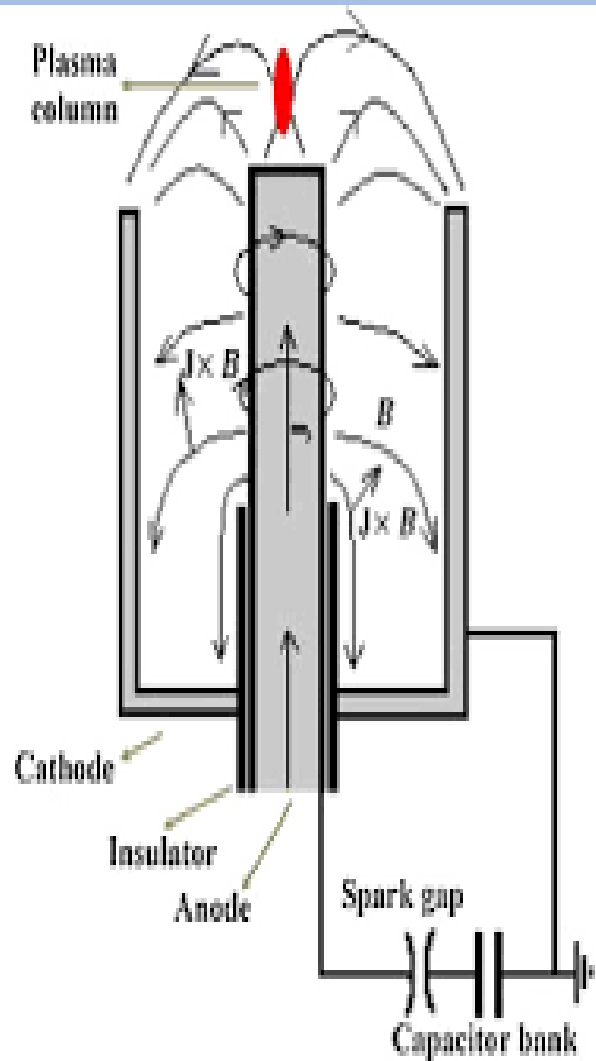
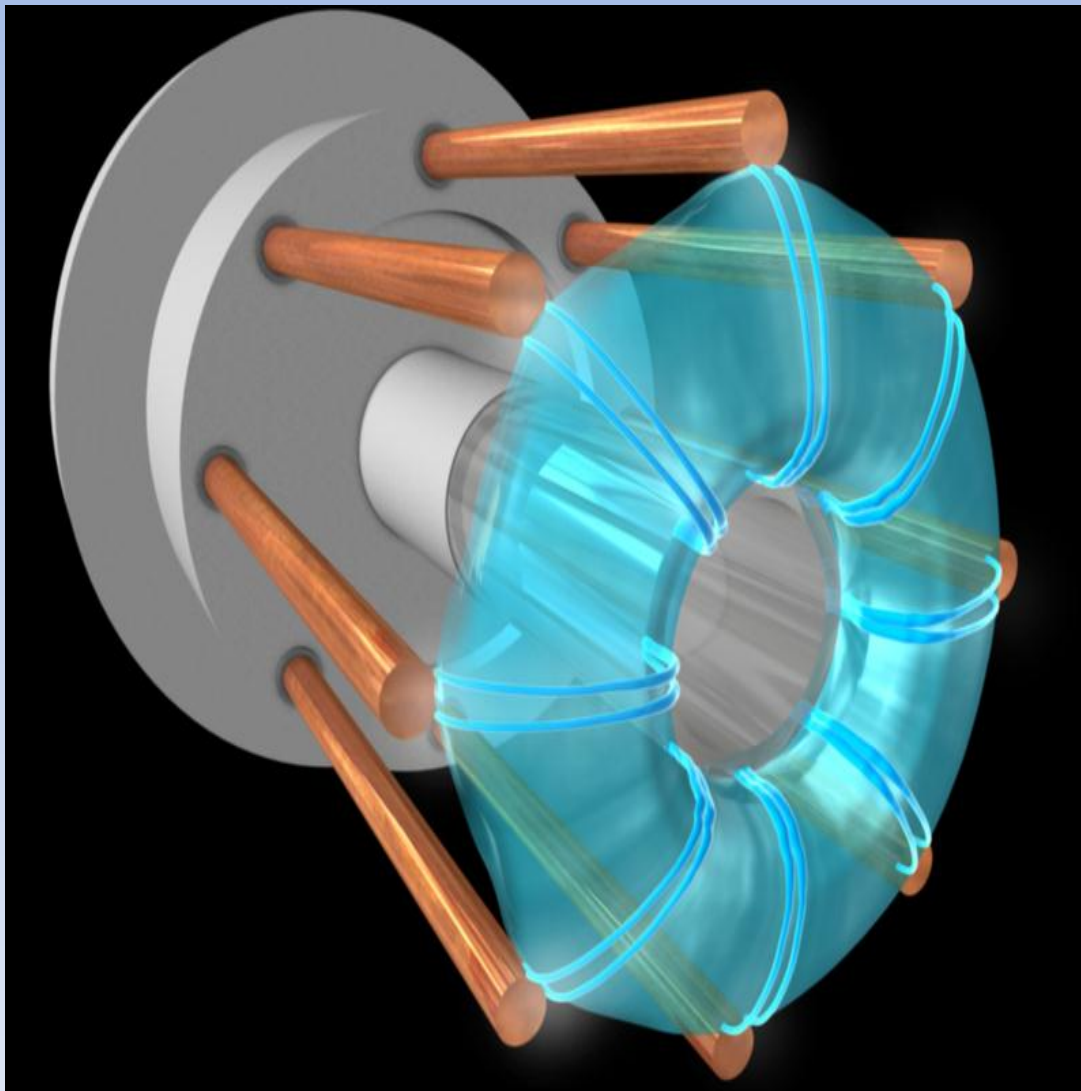
Global leaders celebrate start of assembly of ITER fusion energy-producing device



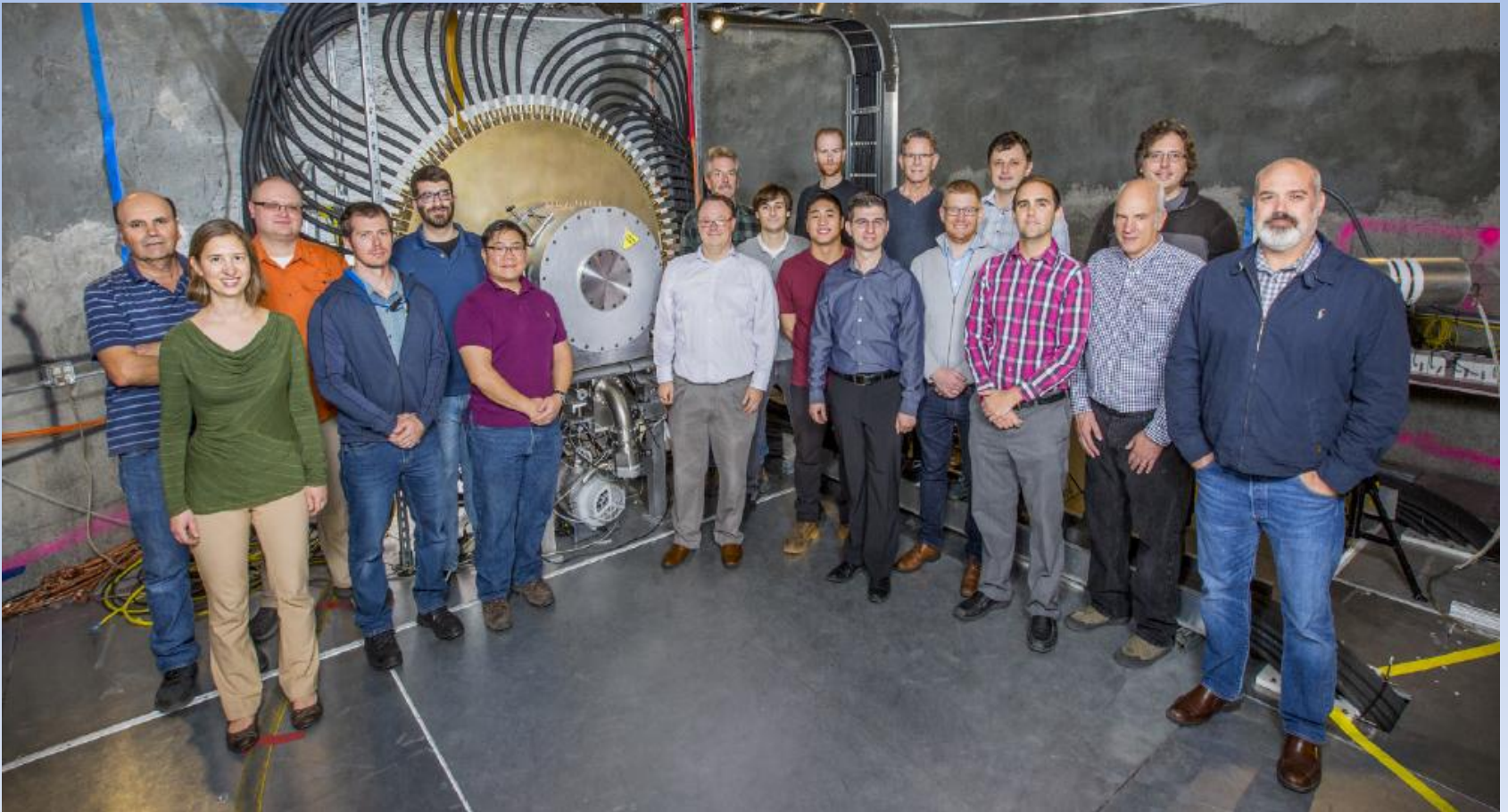
Photograph of EGYPTOR Device



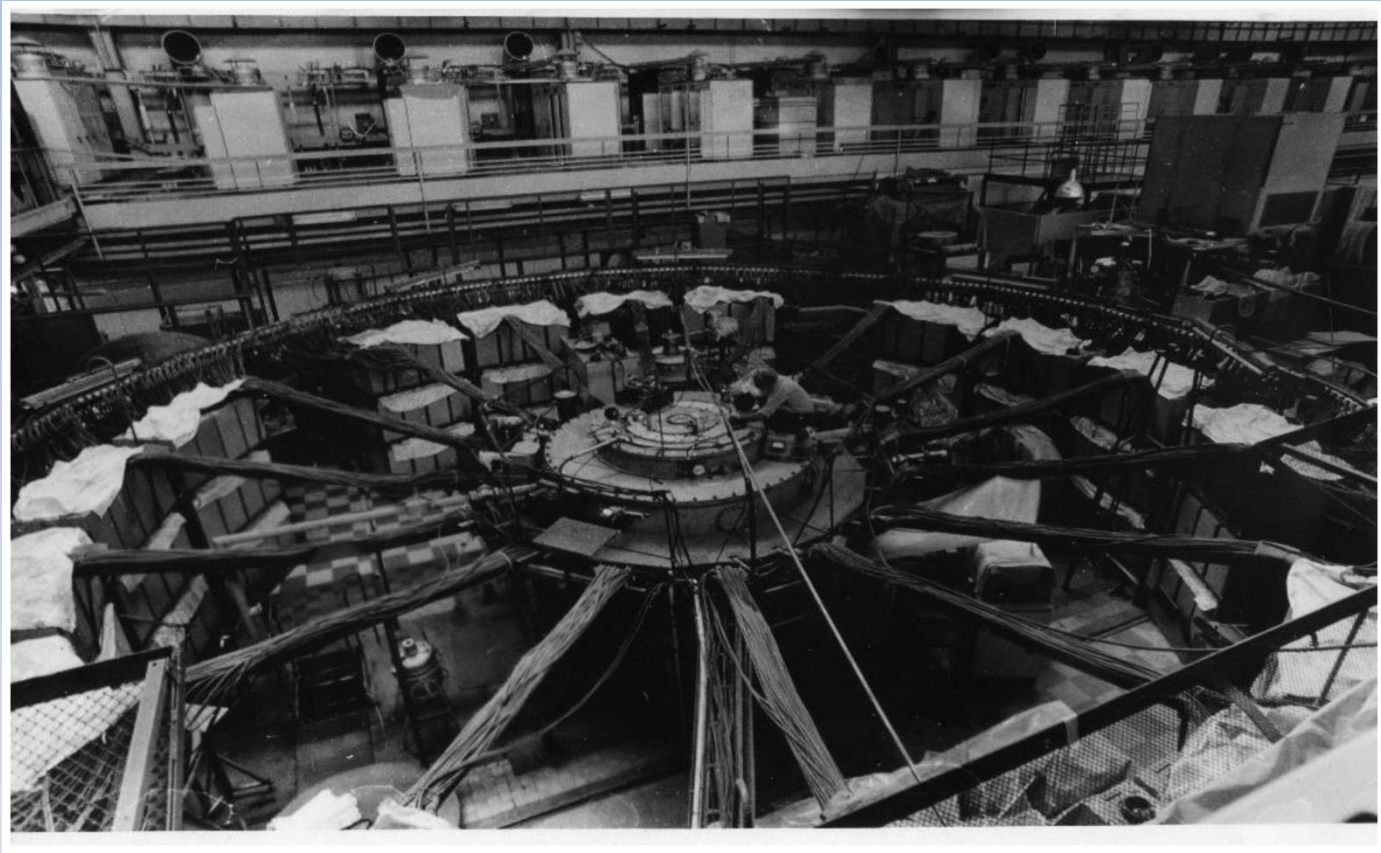
Plasma Focus



The MJOLNIR design-build team: (from left to right) Rick Anaya, Andréa Schmidt, Steve Chapman, Justin Angus, Matt McMahon, Ed Koh, Tony Link, Don Max, Clément Goyon, Harrison Flores-Alimboyoguen, James Mitrani, Yuri Podpaly, Dave Van Lue, Drew Higginson, Ihor Holod, Chris Cooper, Steve Hawkins, Alex Povilus, Michael Anderson. Not pictured: Tony DaCosta, John Reed, Kurt Walters. (Photo by Ian Fabre.)

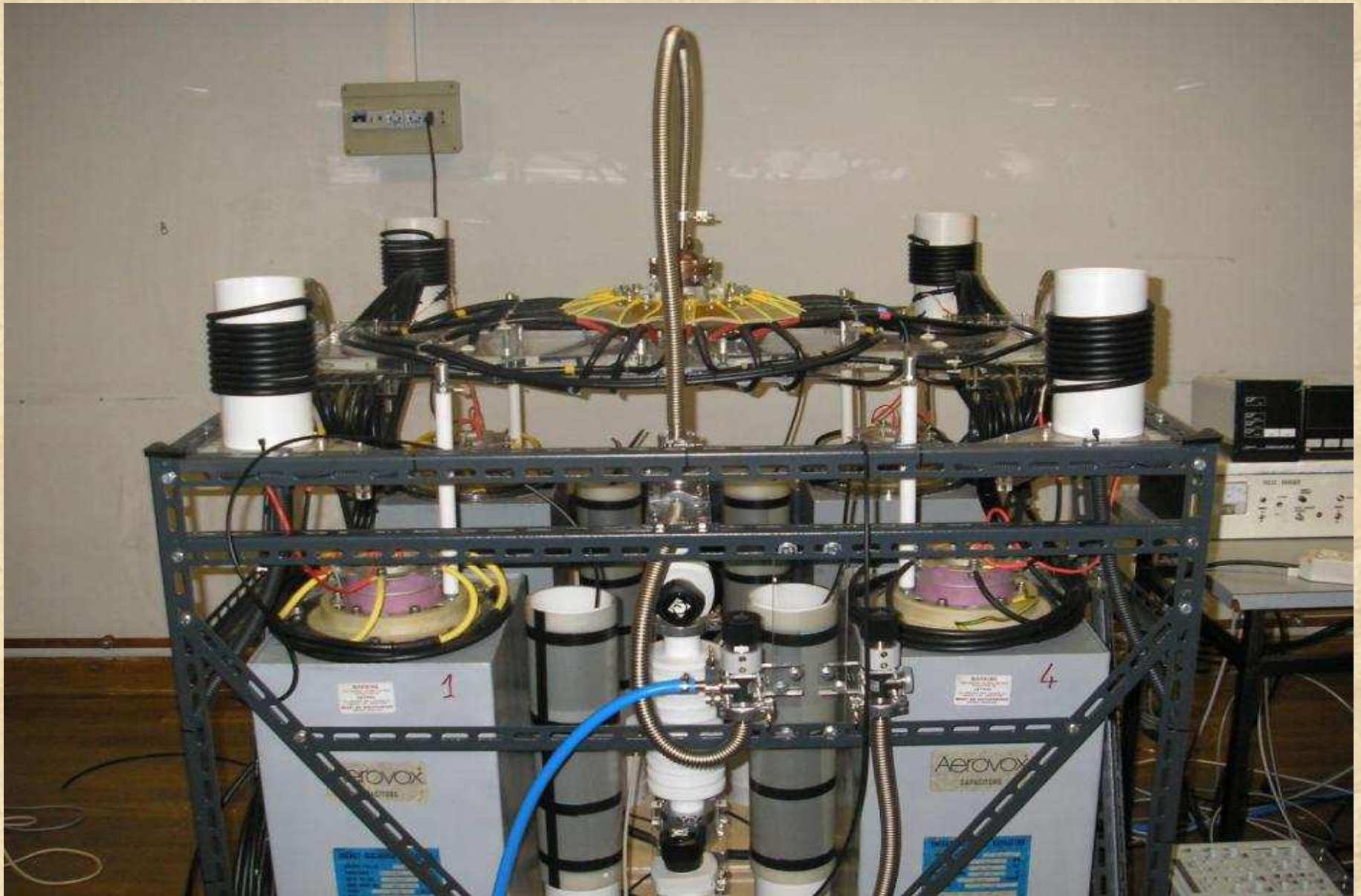


Update on the Scientific Status of the Plasma Focus



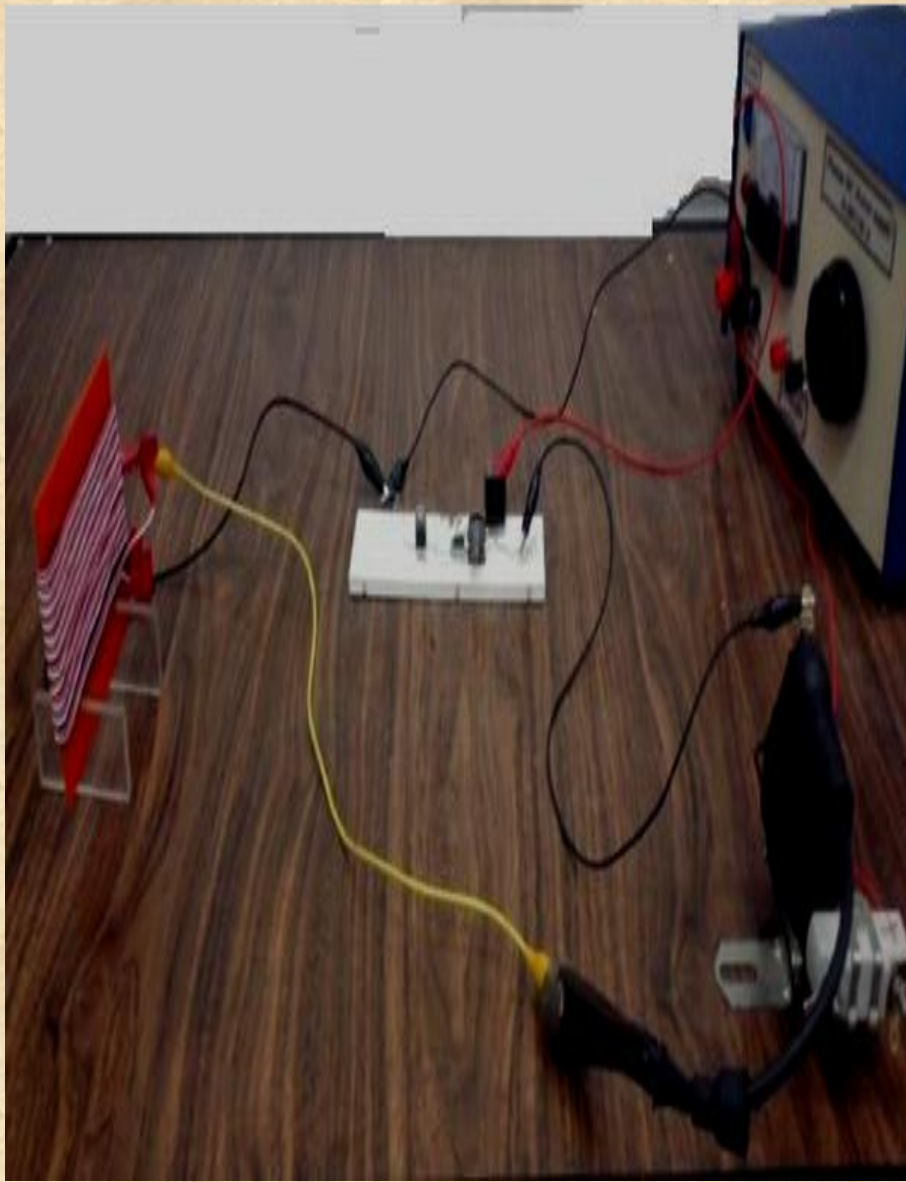




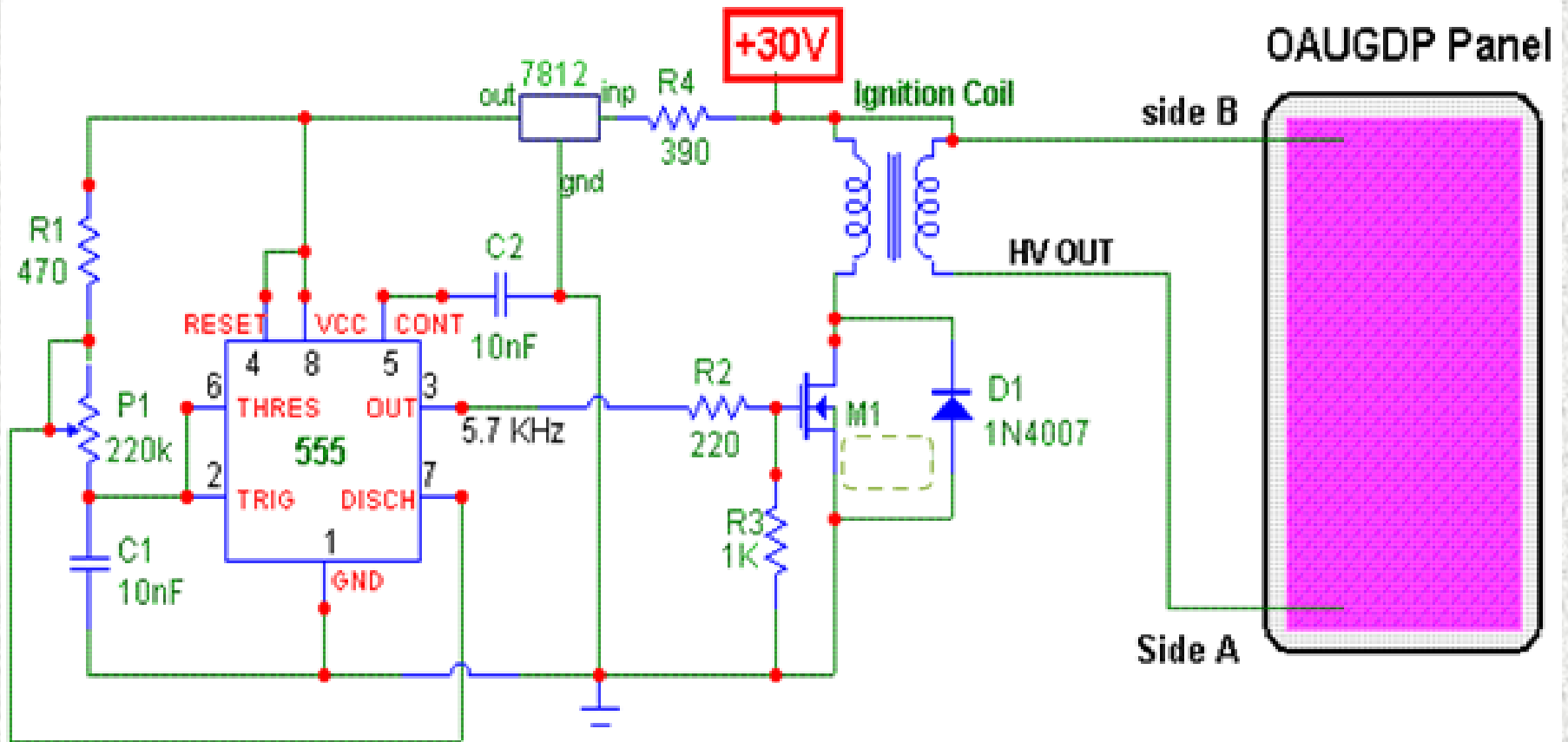


DPF "Bora" fully assembled

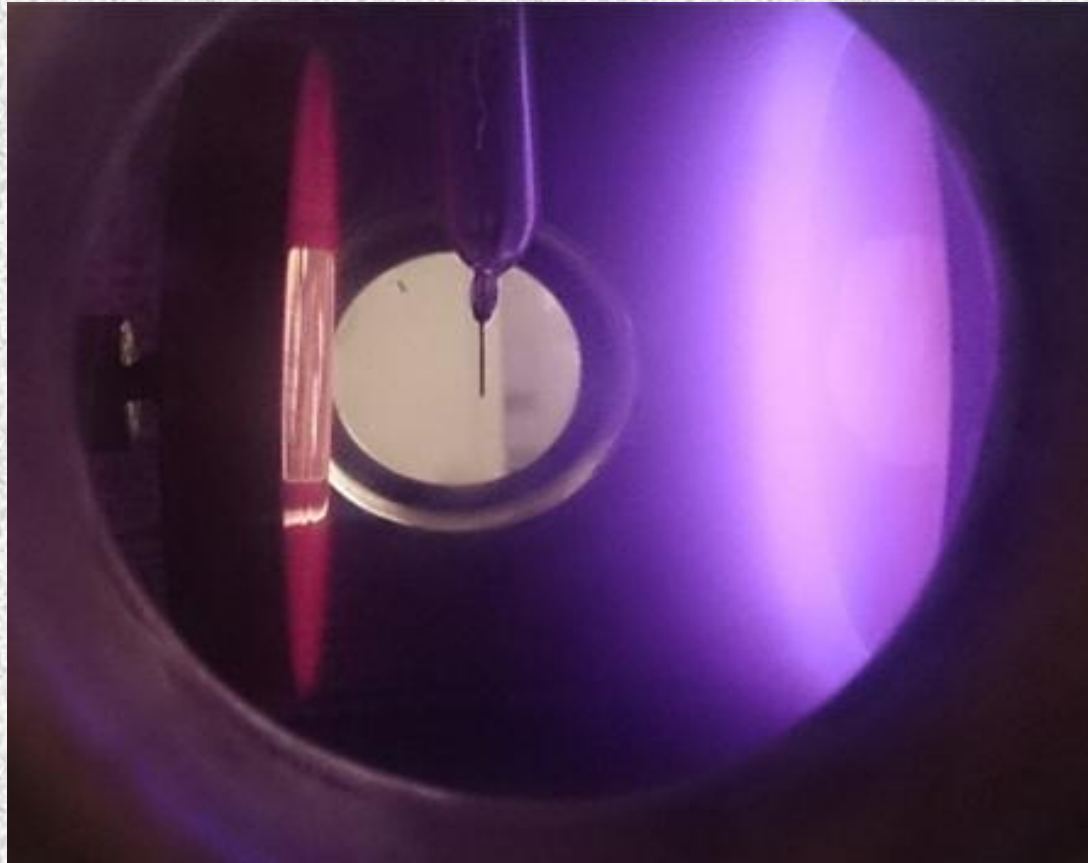
What We Do?



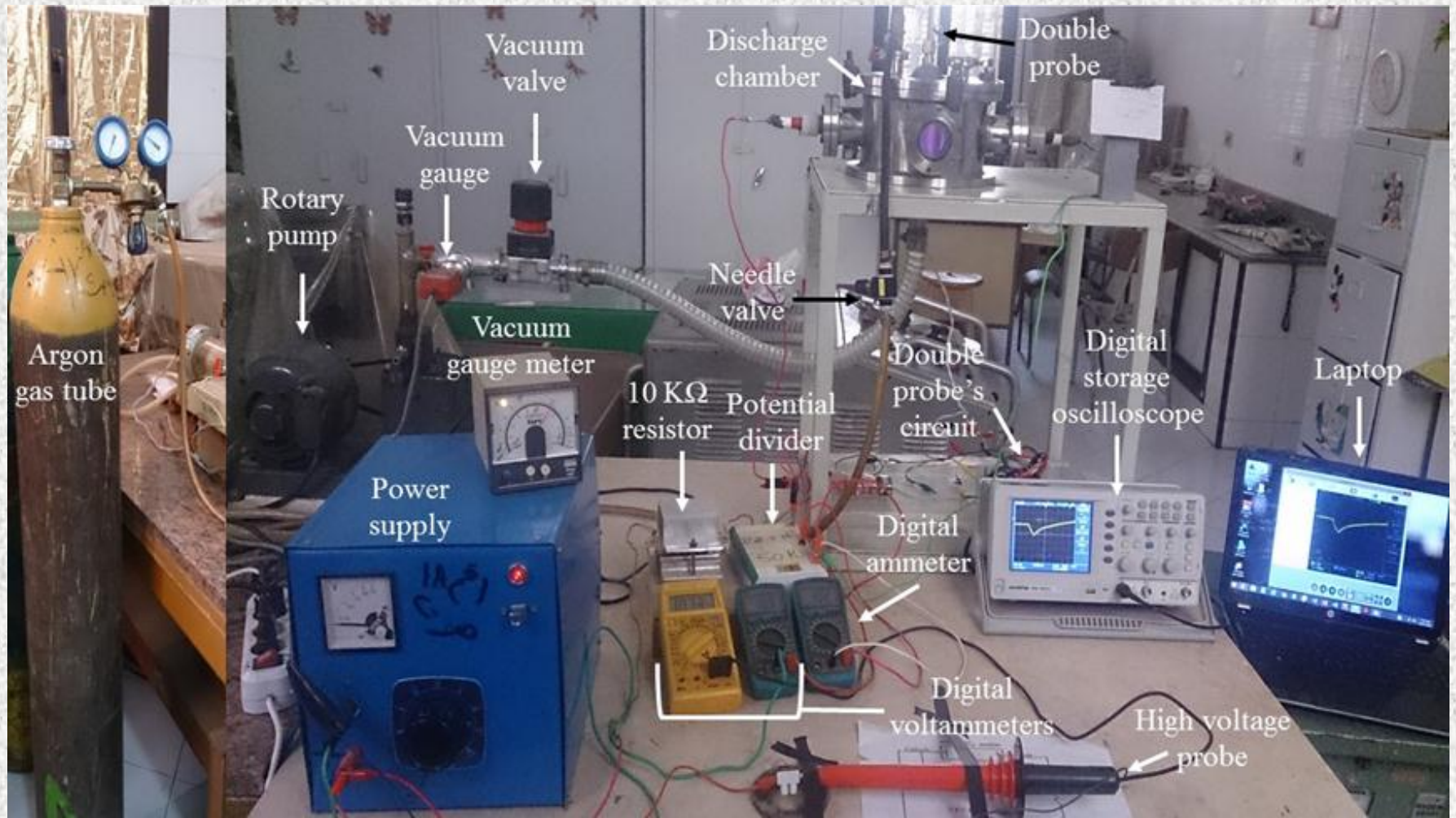
The Photographic view of electronic OAUGDP



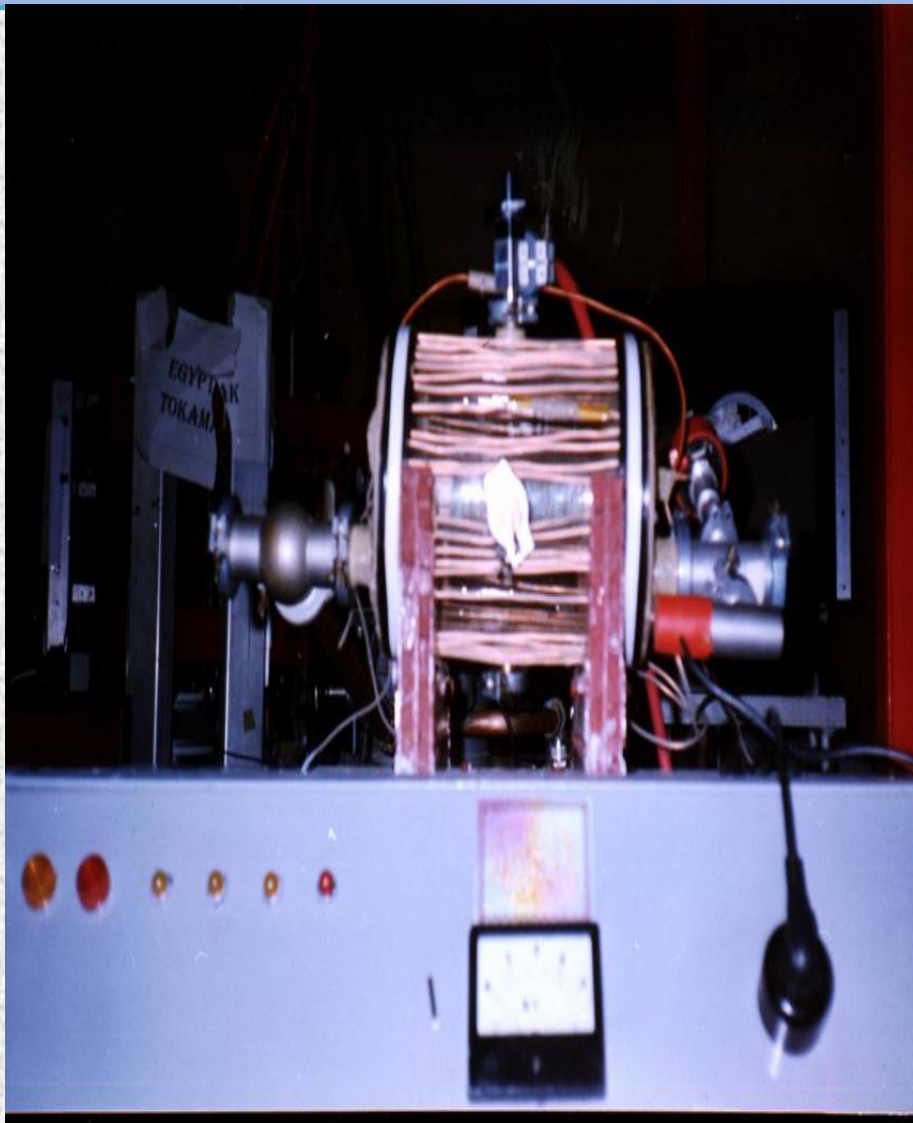
The schematic diagram of electronic OAUGDP



Double probe which was immersed in plasma between the two electrodes anode and cathode

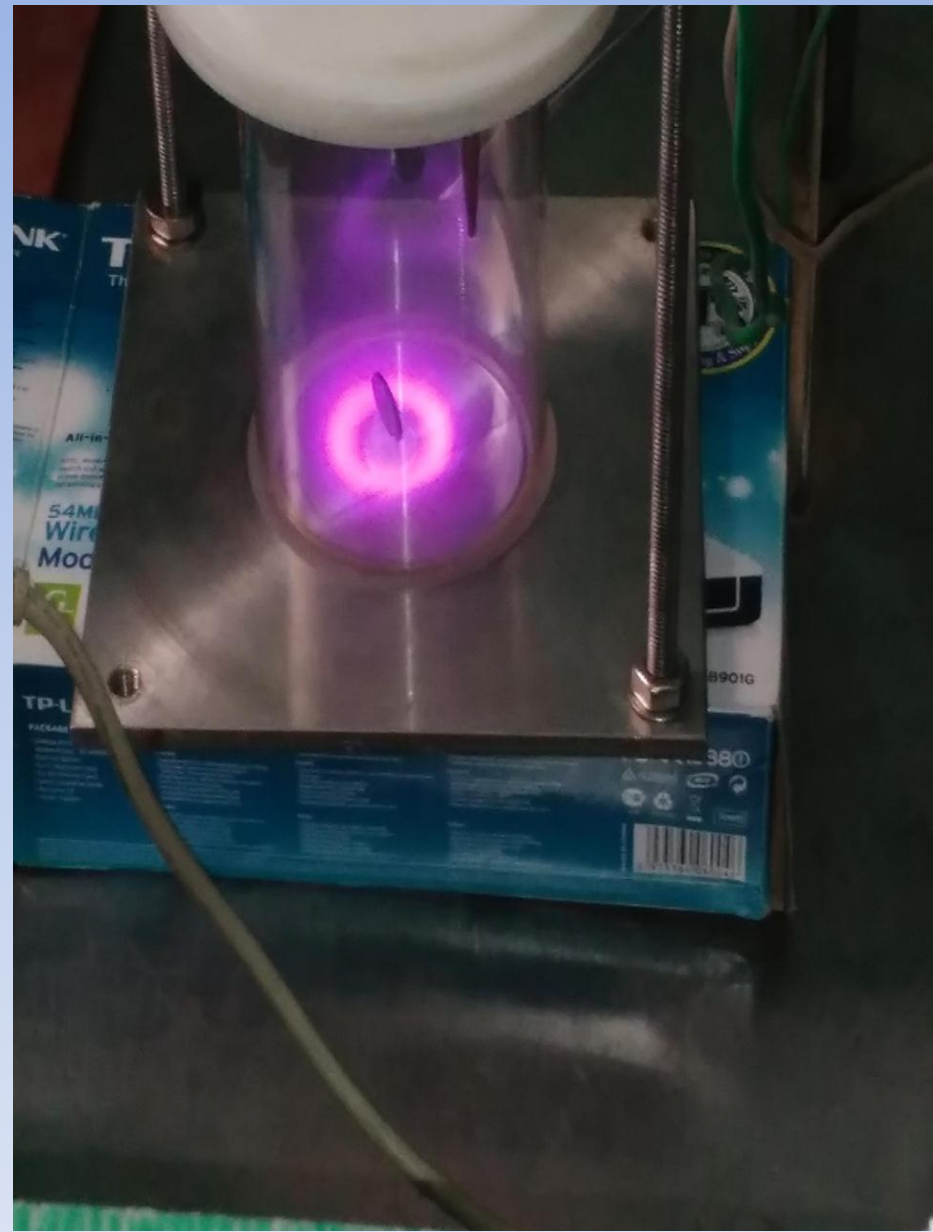
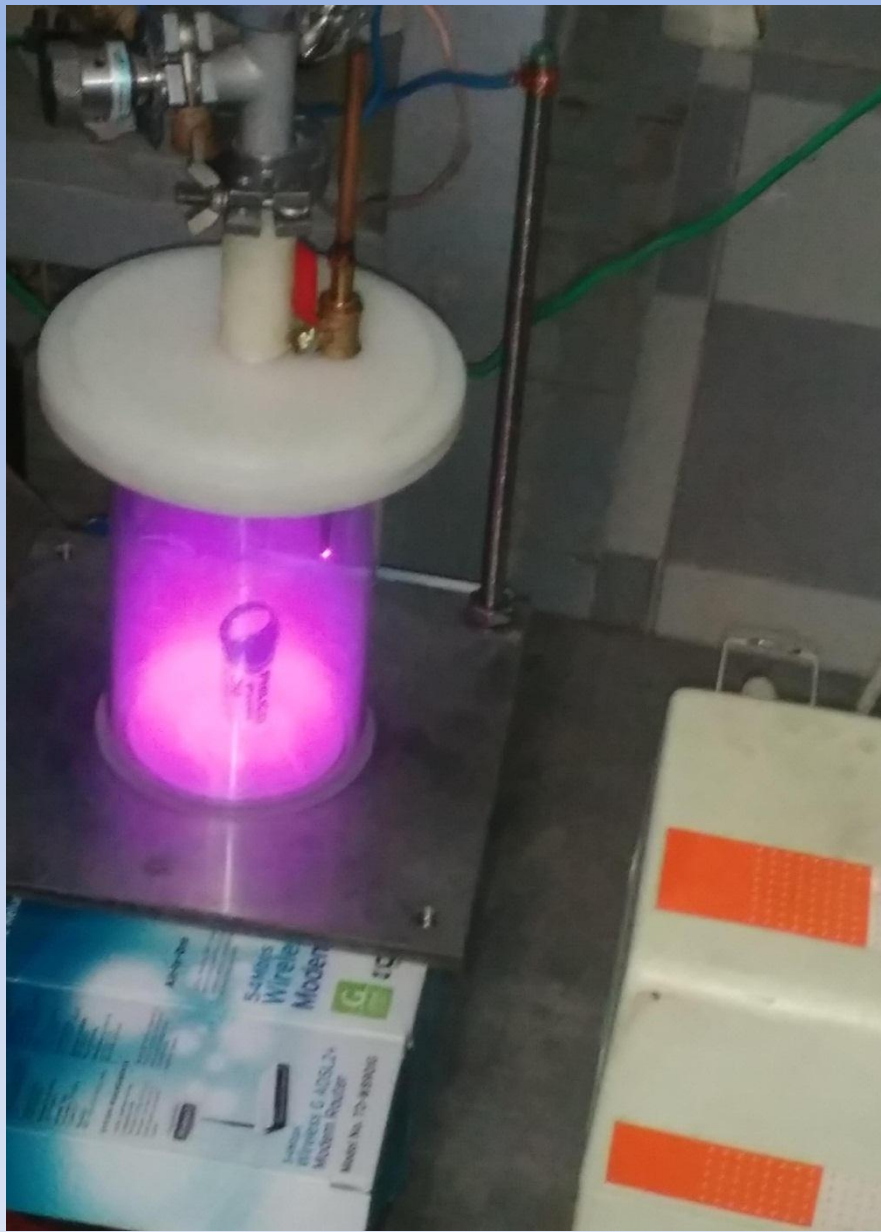


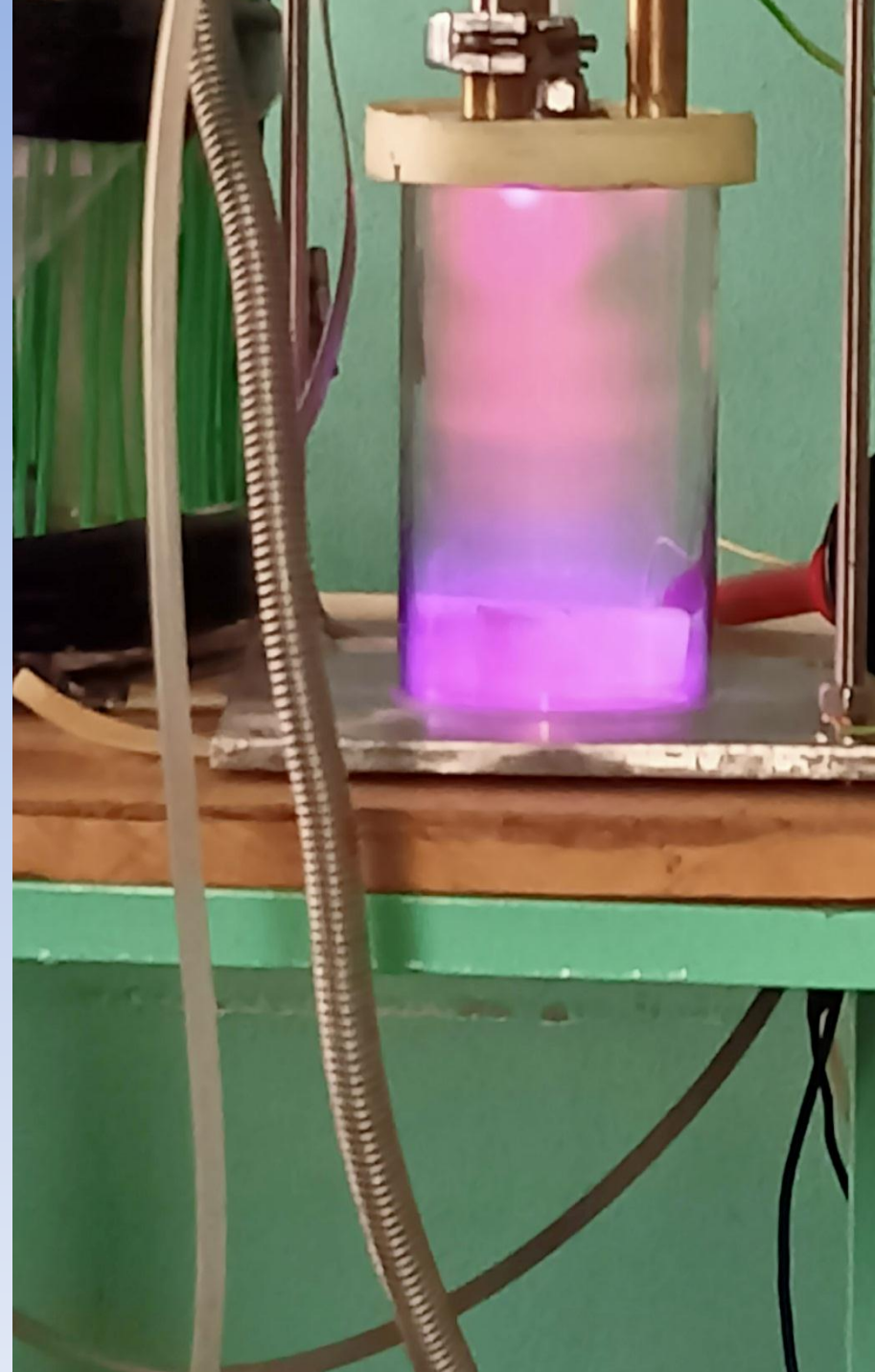
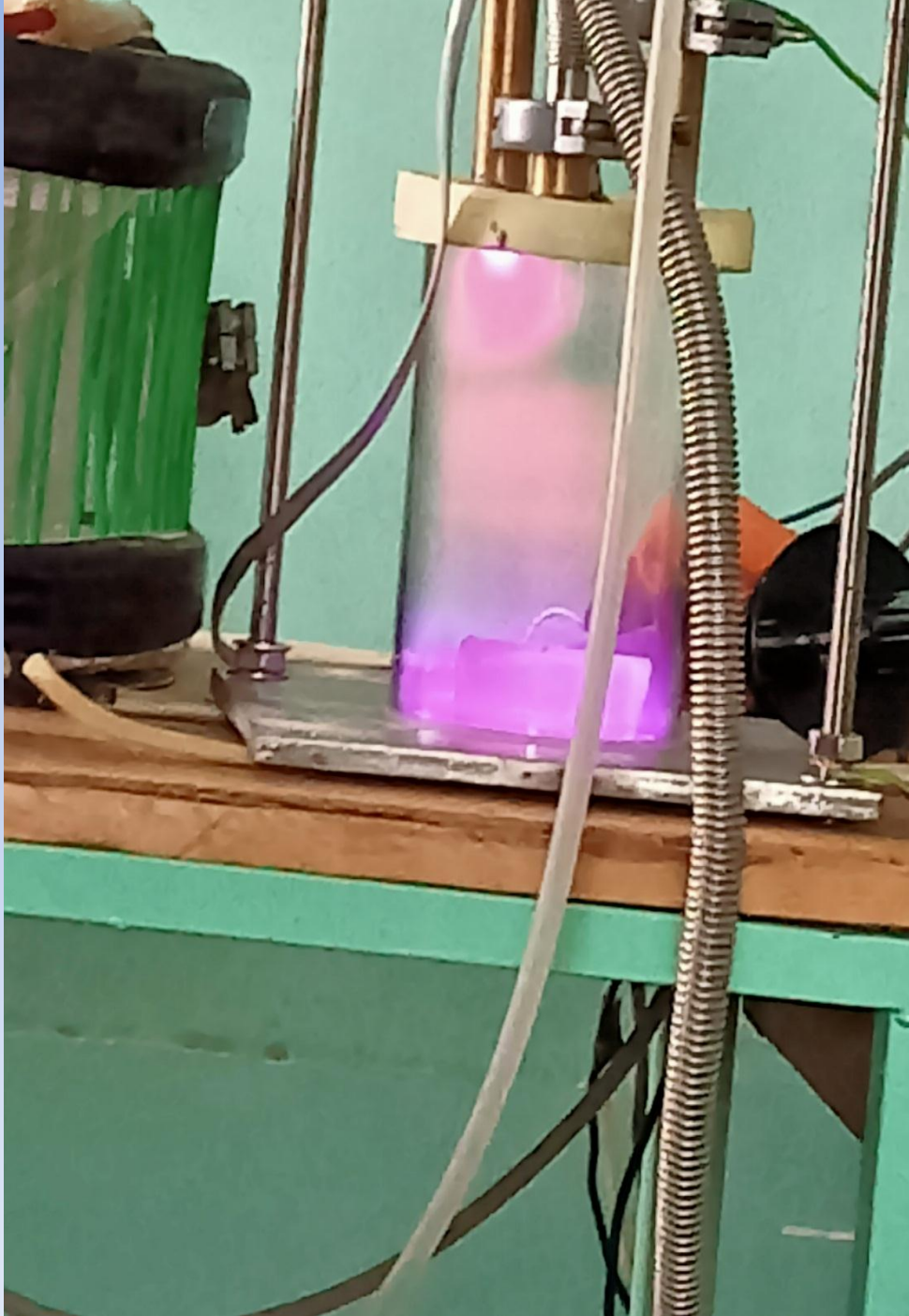
The photographic view of the plasma experiment setup

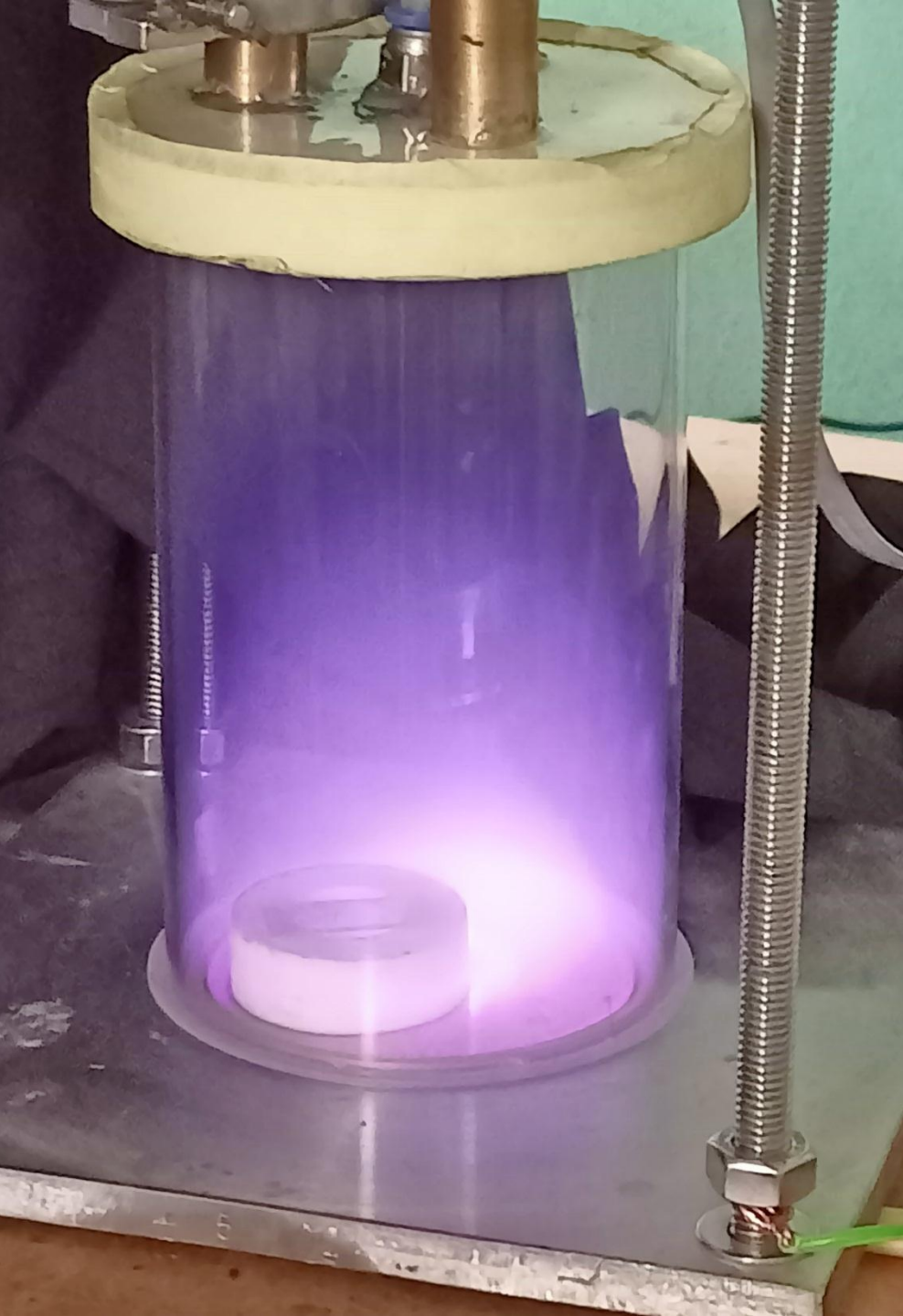


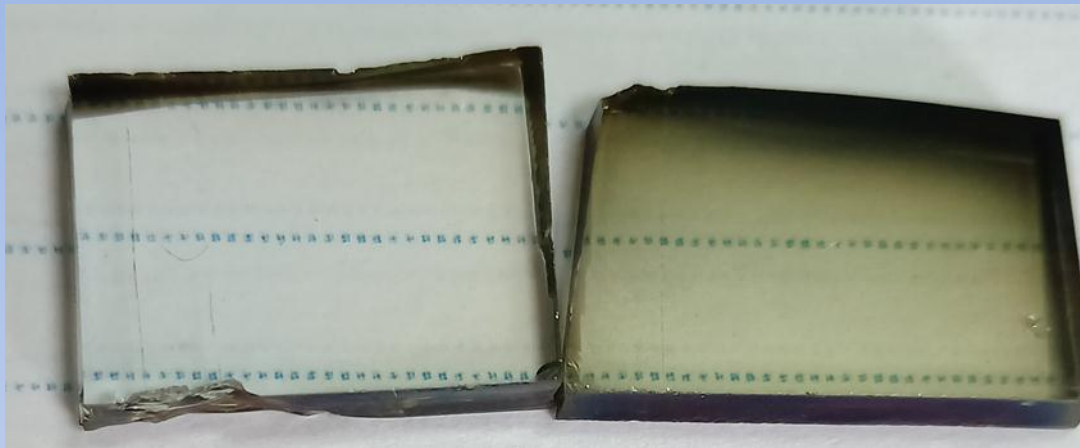
**Photographic view of the BATORM
device**

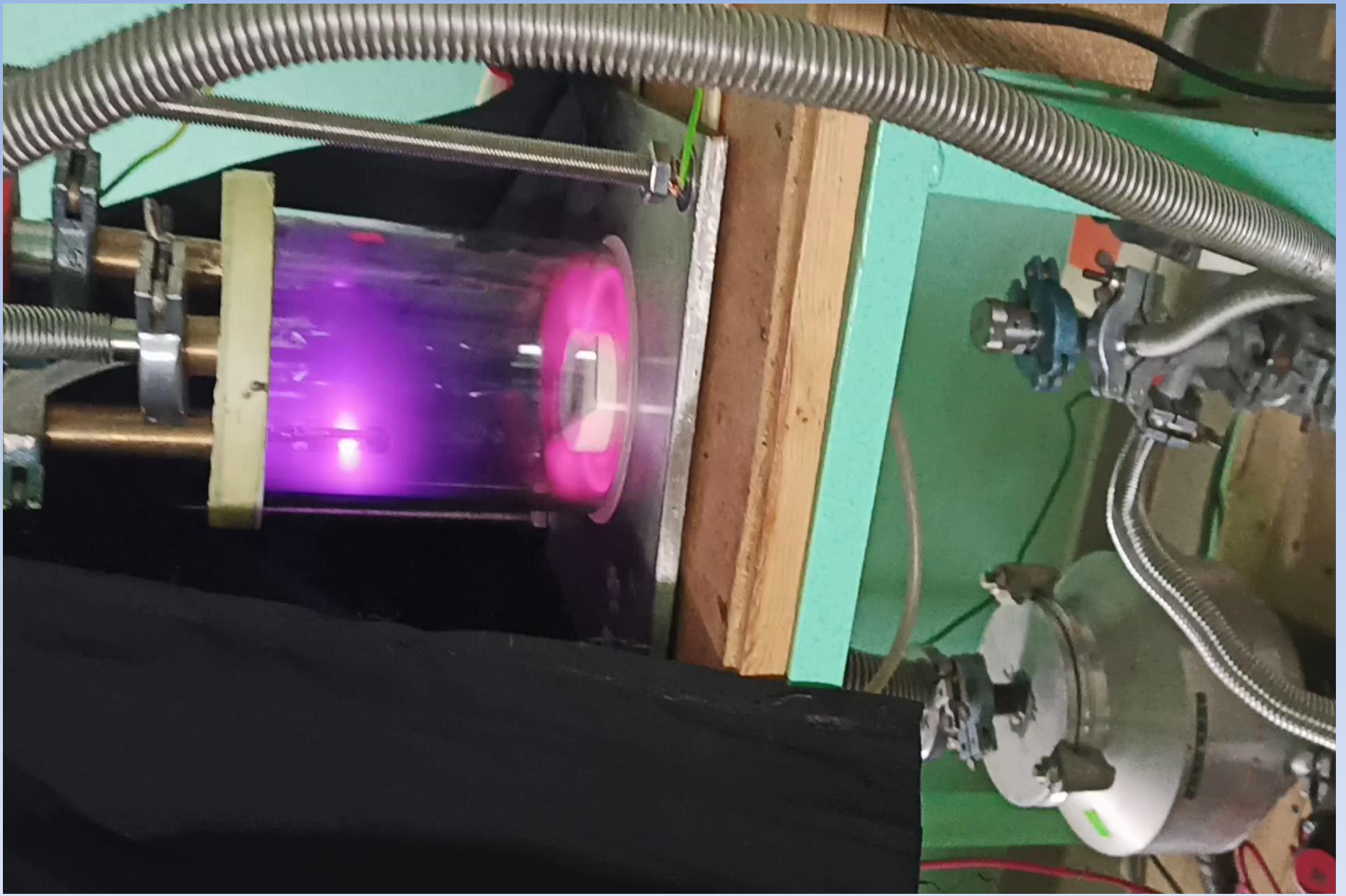


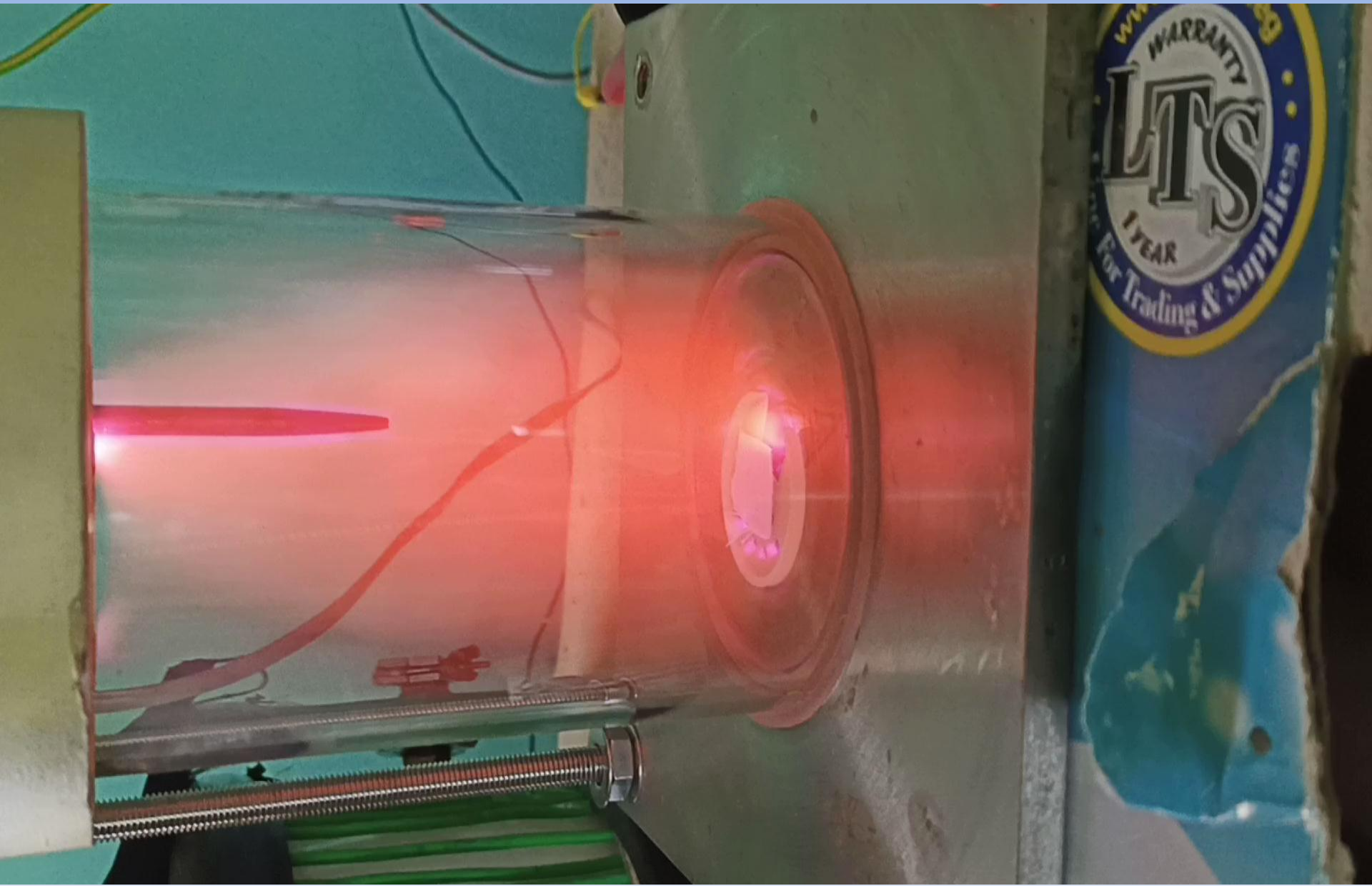


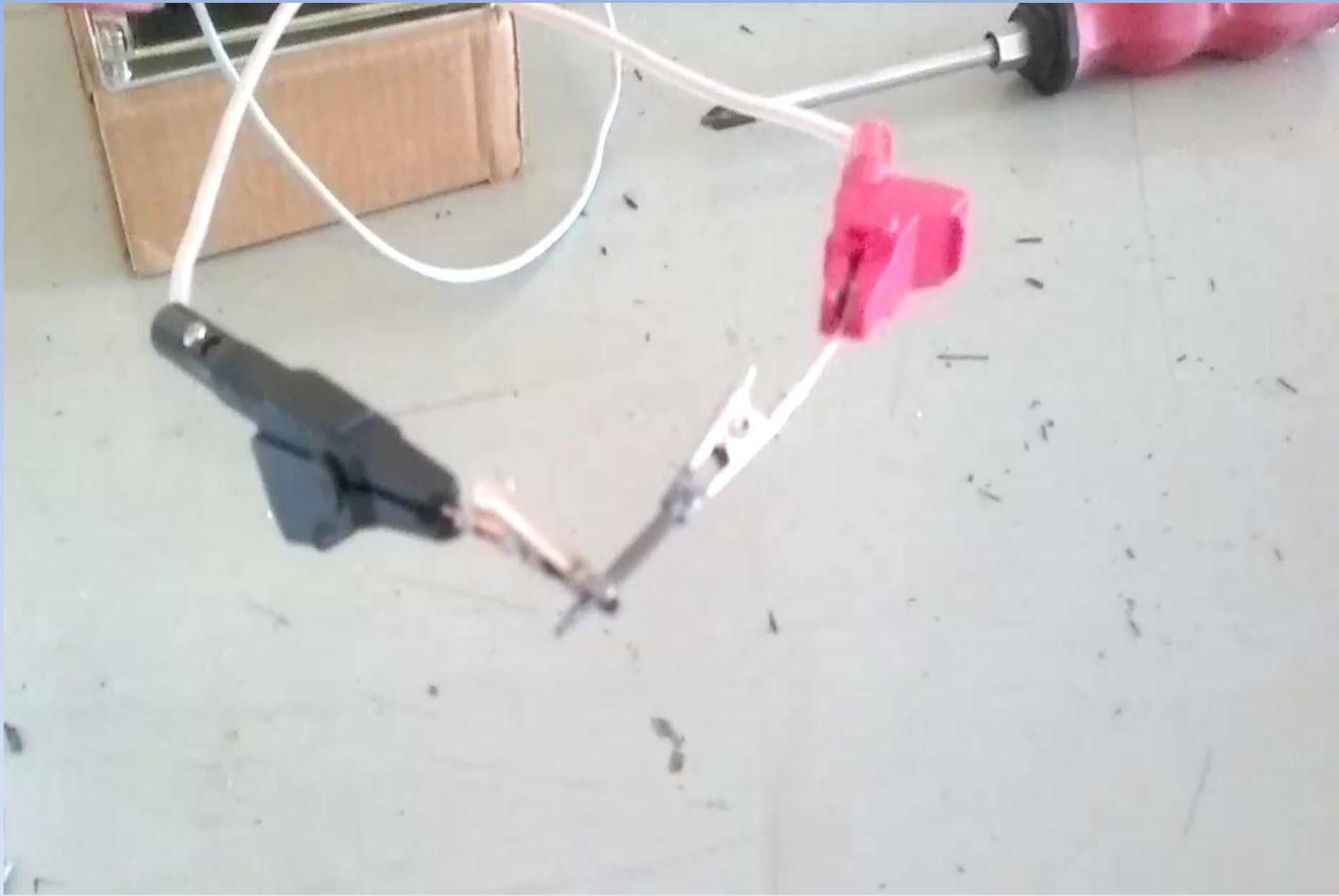










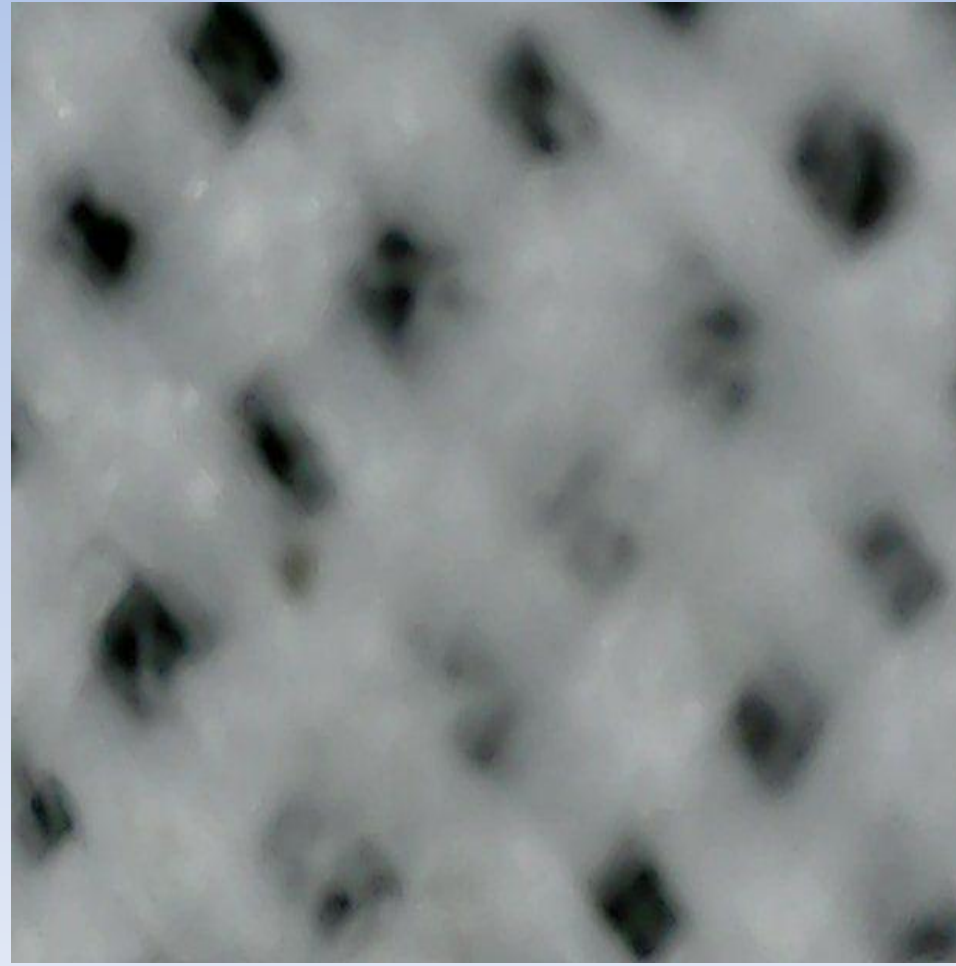
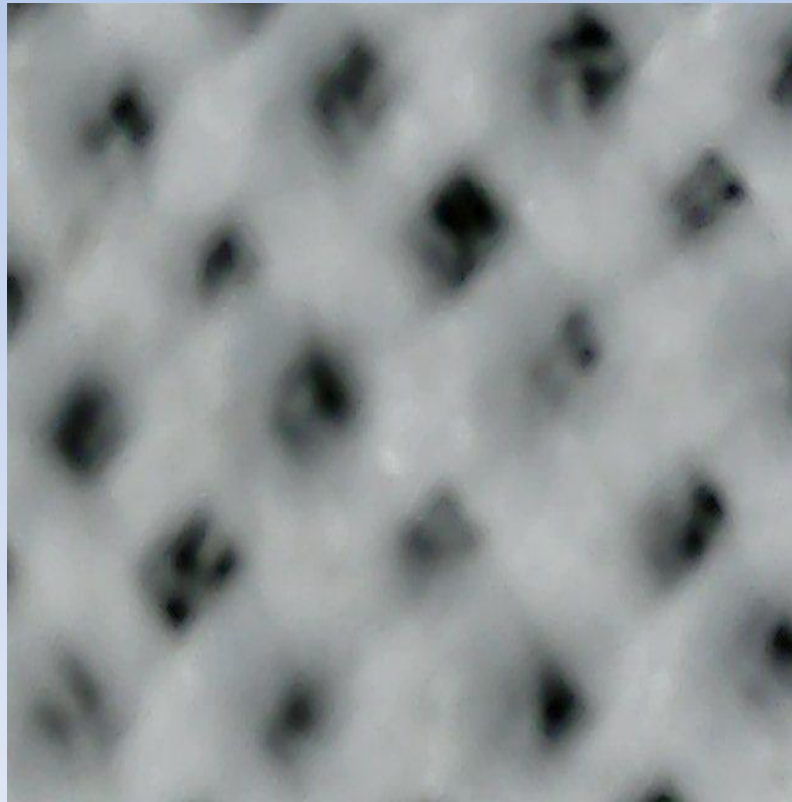
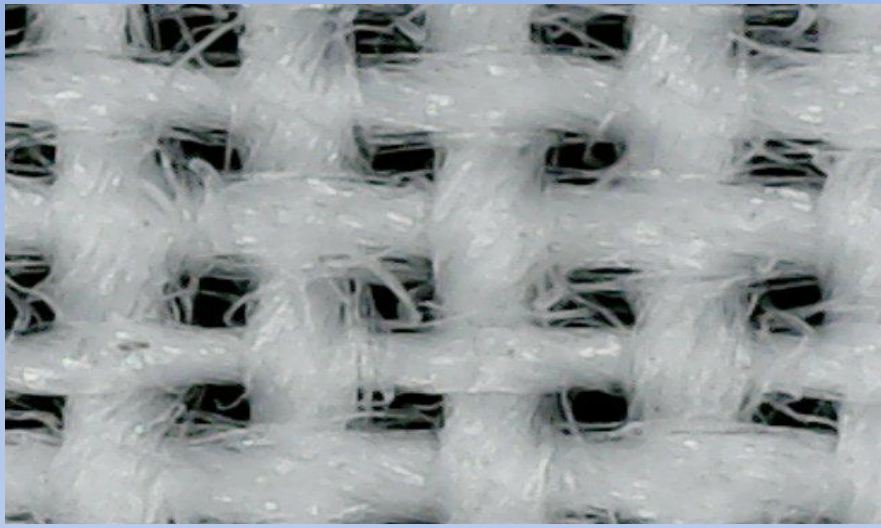


Sterilization of Cotton Fabrics Using Plasma Treatment

S. SHAHIDI¹, M. GHORANNEVISS²

Abstract:

Microbial contamination induces surface deformations and strength degradation of cotton fabrics by invading deeply into the fibers. In this study, the sterilization effects of low pressure plasmas on bacteria-inoculated cotton fabrics were investigated. Oxygen plasma treatment completely sterilized the cotton fabrics inoculated with various concentrations of staphylococcus auras. Also, the influence of plasma treatment on physical properties of fabrics was examined. It was found that the plasma treatment did not affect ultimate tensile strength and surface morphology of the fabrics because it took advantage of relatively low plasma temperature



THANK YOU



Best Article Certificate of the Issue

EC Clinical and Medical Case Reports (ECCMC), is delighted to award you that, the potential Case Report Article entitled

MODERATORS INFLUENCE ON THE SHORT POWERFUL NEUTRON PULSE IN VIEW OF THEIR APPLICATIONS IN THE SHOCK BORON NEUTRON CAPTURE THERAPY OF CANCER

Authored by “VA Gribkov, M Chernyshova, AA Talab, GG Giannini and F Longo” has undergone double blinded peer review and the article has been published in Volume 2 Issue 4 (Page No: 115-126).

Based on the eminence, the article has been elected as “*Best Article of the Issue*”.

We heartily congratulate you for the successful publication

Editorial Office

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