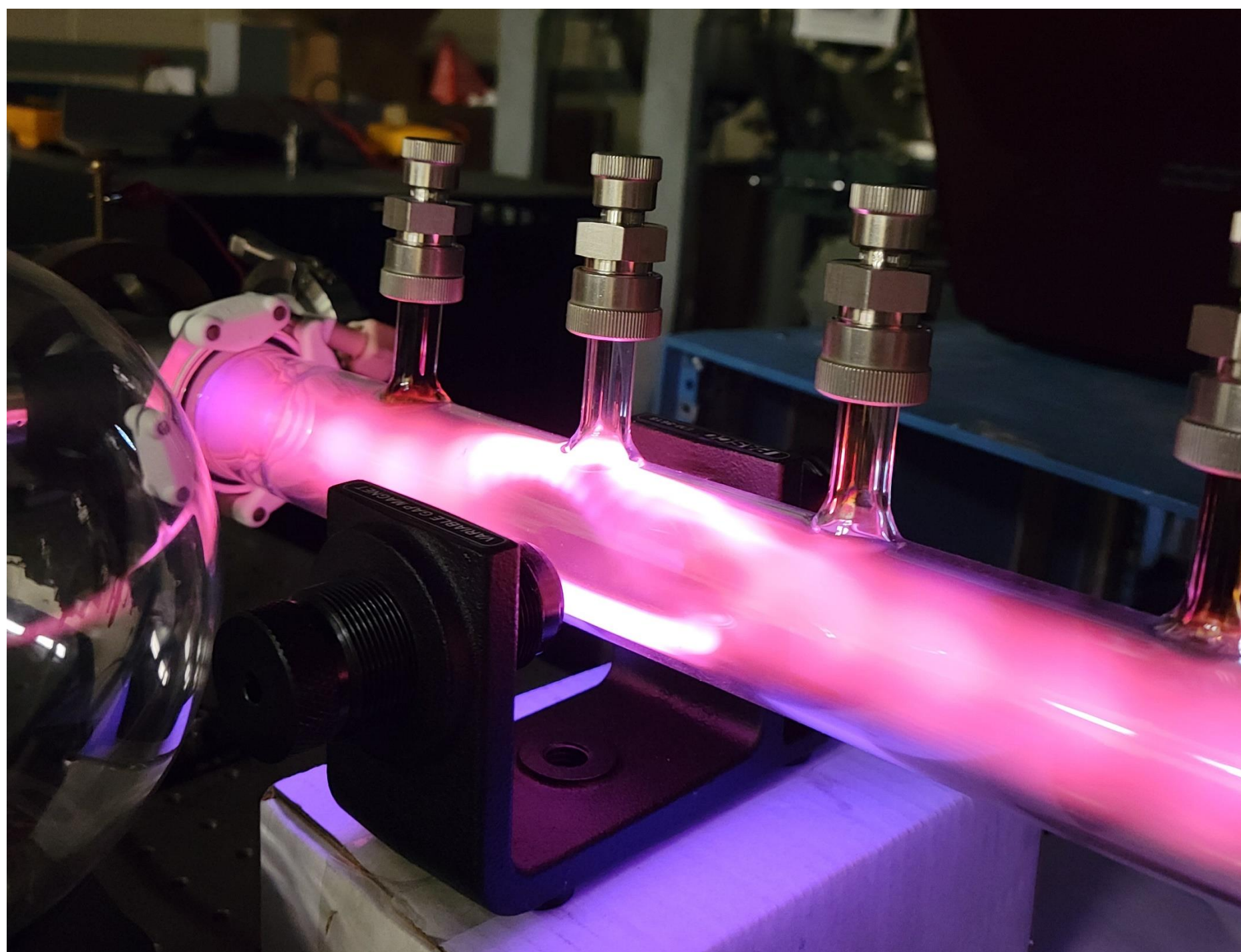


Magnetic Field Perturbation of Plasma Striations

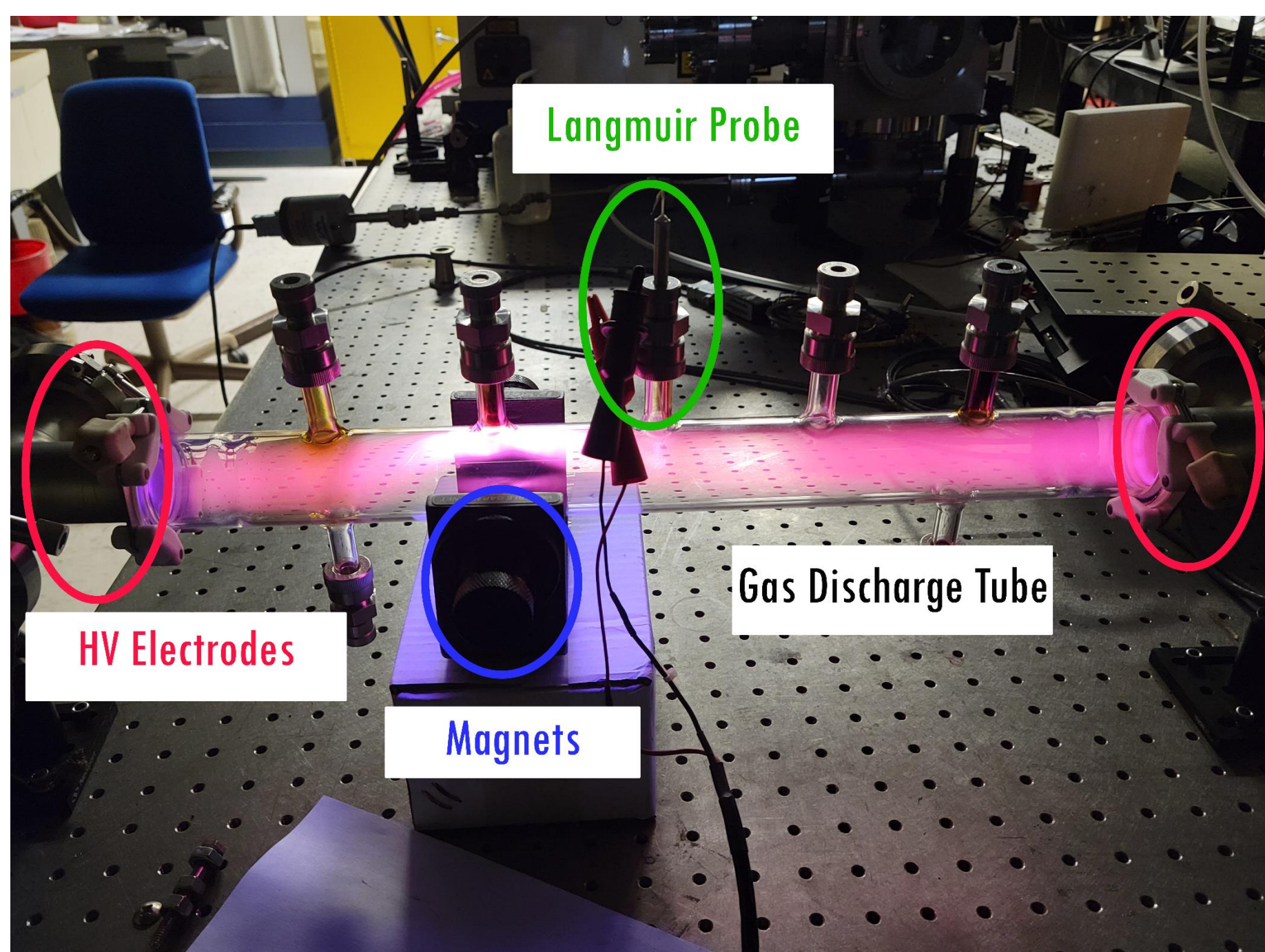
*Aidan Miller, Dr. Themistoklis Chronis, Dr. Gabe Xu,
The UAH Propulsion Research Center*

Introduction

In this research external permanent magnets were used to disturb DC plasma striations (waves) in a gas discharge tube, and the resulting changes in electron density and temperature were measured.



Methods



Vacuum Pressure: 520mTorr ; Voltage: 6-8kV ; Magnet Type: Neodymium ; Ionized Medium: Air (Nitrogen)

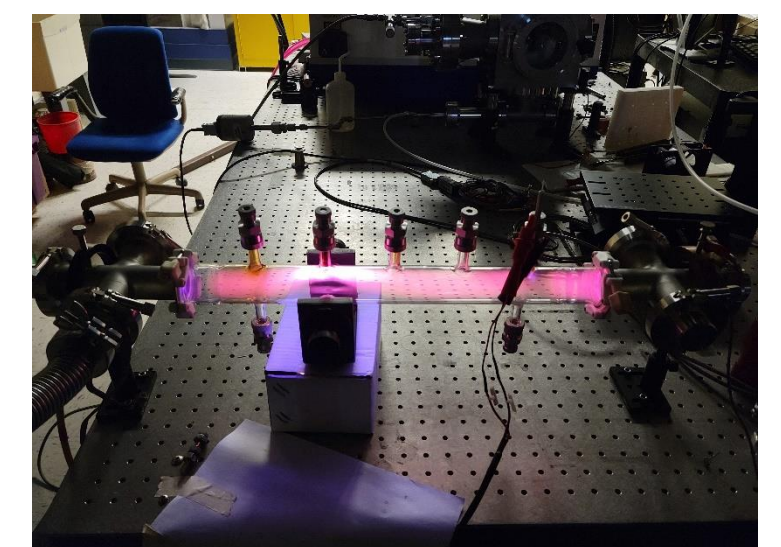
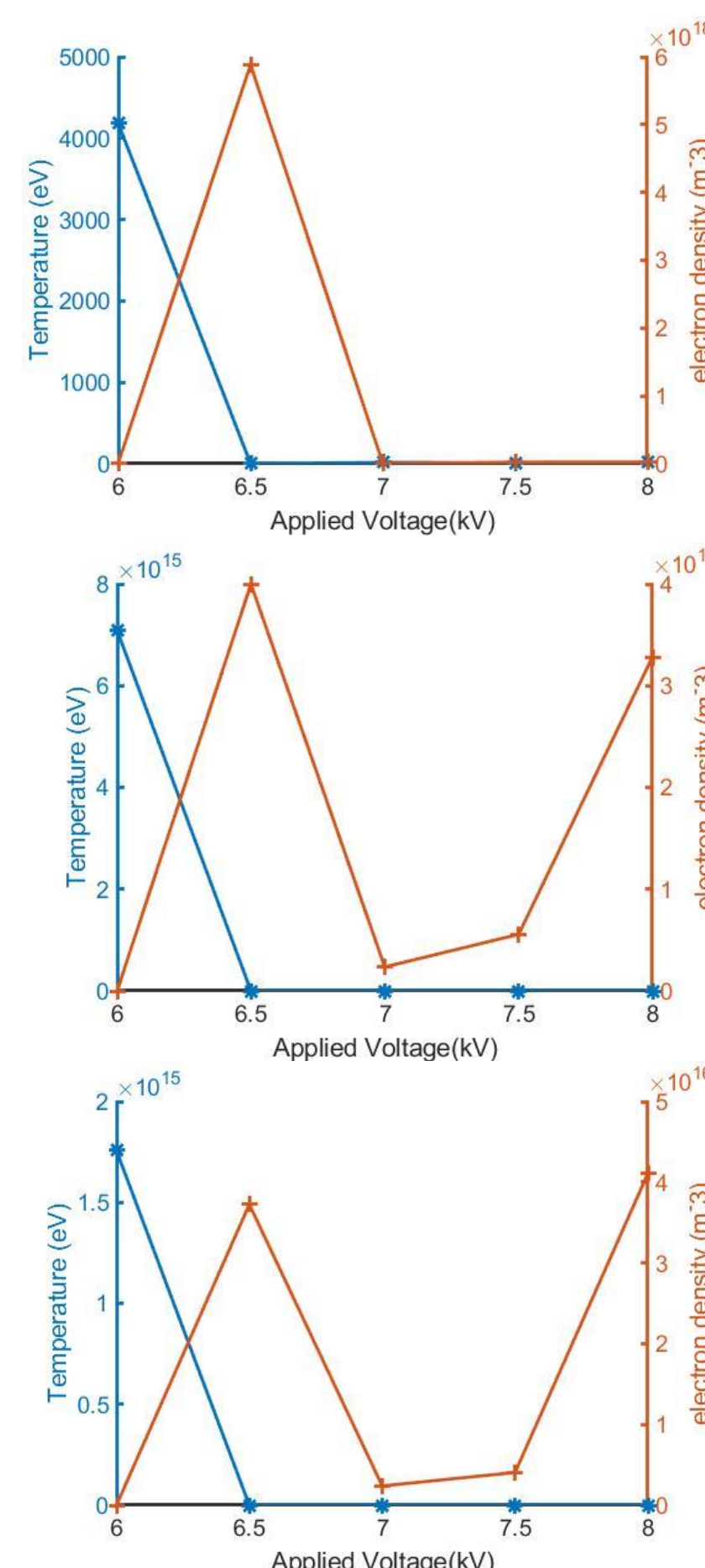
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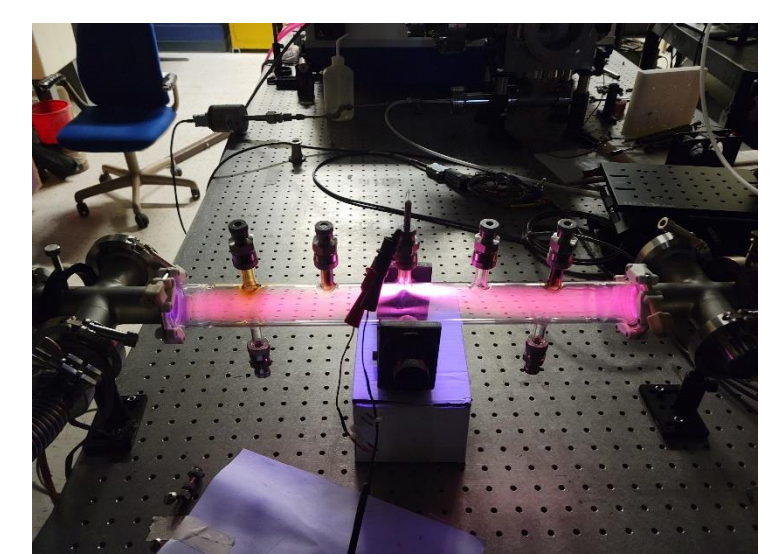
Acknowledgements

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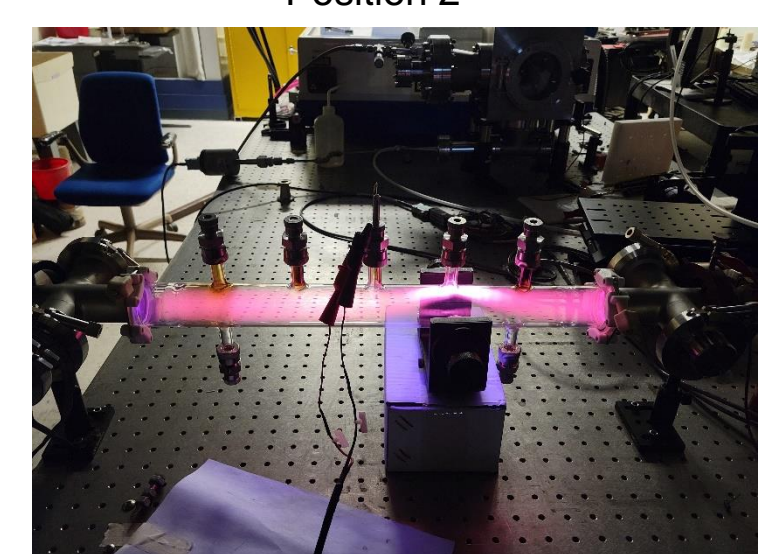
Data



Position 1



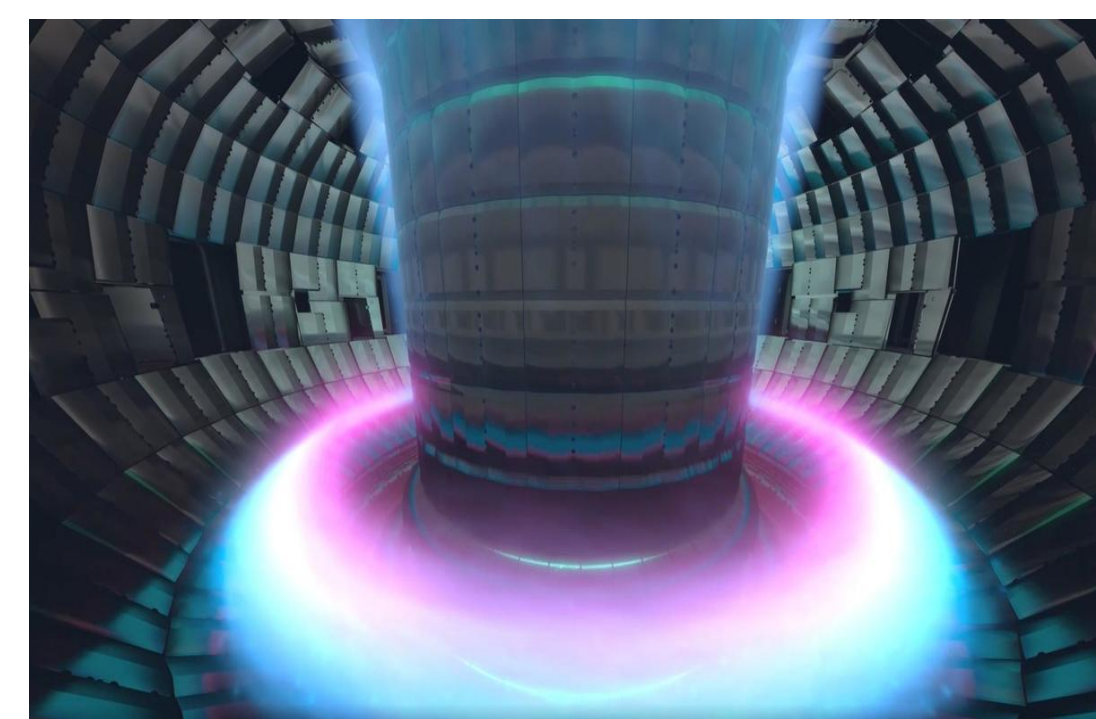
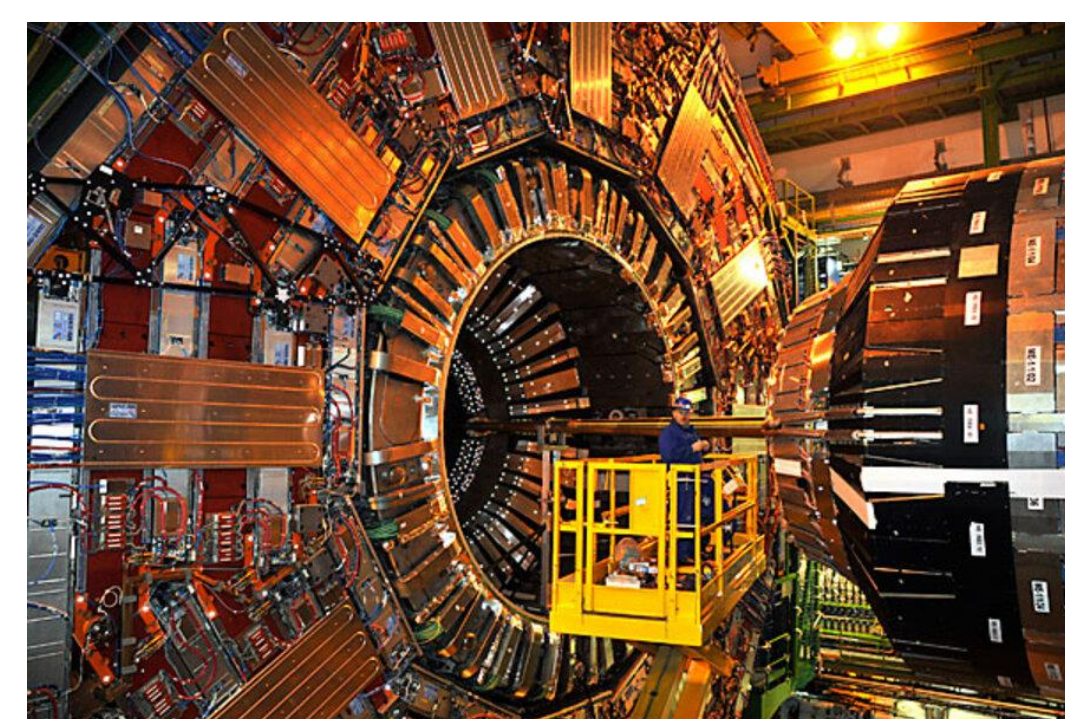
Position 2



Position 3

Results

The data collected shows a proportional deflection of the plasma around the magnets. This defines a strong acceleration for the plasma as it bends away along magnetic field lines.



The results of this research define the basis for control of confined plasmas. This is further applied in particle accelerators, fusion reactors, plasma thrusters, and much more.