

**Project Title:**

Exploring various plasma source designs for Atmospheric Pressure Plasma Jets (APPJ)

**Project Reference Code:**

Auburn-Thakur 1

**Host Facility:**

Auburn University

**Host Facility Location:**

380 Duncan Drive

Auburn, AL 36832

<https://www.auburn.edu/>

**Project Description:**

Atmospheric Pressure Plasma Jets (APPJ) are an example of a low temperature, high pressure plasma discharge that produce a high velocity effluent stream of highly reactive chemical species that can then be used for a host of biological applications. In the Magnetized Plasma Research Laboratory (MPRL) at the Auburn University, we plan to explore several designs for the plasma source for building different kinds of APPJs. In this project we shall try to design, construct, and test a series of different kinds of APPJs and optimize for plasma production for future applications to biological systems. A long-term goal for this project is also to reduce the cost of building a traditional APPJ, so that it can have a greater range of applicability. A low cost APPJ can also have pedagogical applications as it can be used at plasma outreach programs at science fairs, community colleges and high schools, due to its interactive nature, being room temperature plasma sources without the need for costly or bulky vacuum chambers, vacuum pumps and magnet systems (electromagnets, power supplies, cooling water and/or recirculating chillers).

**Disciplines:** Physics, Engineering, Mathematics

**Is U.S. citizenship required to participate in this project?**

NO

**Internship Location and COVID-19 related Backup Plan**

The internship location is at Auburn University. We are planning for an in-person internship. However, due to the continuing COVID-19 pandemic, we are preparing additional options to ensure that the internship will take place, such as a hybrid or fully virtual option.

**Name(s) of Mentor(s) and contact information:**

Saikat Chakraborty Thakur ([szc0199@auburn.edu](mailto:szc0199@auburn.edu))

**Internship Coordinator/ HR manager:**

Allen Landers ([landeal@auburn.edu](mailto:landeal@auburn.edu))

The name and contact information of personnel at the host facility is provided for further assistance with questions regarding the host facility or the project.



# Alabama Plasma Internship Program

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Interns will not enter into an employee/employer relationship with the host facility. No commitment with regard to later employment is implied or should be inferred.