



Project Title:

Hollow Cathode Internal Physics and Kinetics

Project Reference Code:

UA-Branam

Host Facility:

The University of Alabama

Host Facility Location:

Tuscaloosa, AL 35487

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

Project Description:

Research into the fundamental physics of hollow cathodes as an electron emitting source is limited by both physical access as well as understanding of how the plasma is produced. The objective of this research is to quantifiably describe the relationship between the ionization events (i.e. singly, doubly) and the self-sustaining mechanism of the low work function insert. The evidence needed to better describe the plasma physical phenomena (ion production, ion-surface impact, electron production at the surface) inside of the hollow cathode is the accurate measurements of individual species' temperatures, plasma composition, ionization states, and surface temperatures.

Disciplines:

Plasma Physics

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

No

Internship Location and COVID-19 related Backup Plan

The internship location is the University of Alabama. Due to the COVID-19 pandemic, we are preparing multiple options to ensure that the internship will take place. We are looking at least at an in-person, hybrid, and fully virtual option. For any in-person component we will ensure that there is adequate physical spacing between workspaces, following all university cleaning protocols.

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

Richard Branam (rdbranam@eng.ua.edu)

Internship Coordinator/ HR manager:

Amy Lang (alang@eng.ua.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.

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.