Post-Doctoral Researcher in Magnetized Laser Produced Plasma Experiments for Fusion

Applications are invited for a Post-Doctoral Researcher position at the University of Alabama in Huntsville (UAH) starting at the earliest in January 2023.

Description: The Post-Doctoral Researcher will be joining new collaborative project between UAH and Los Alamos National Laboratories (LANL) to study the interaction between a magnetized plasma target and a high velocity plasma jet to advance our understanding of the plasma-jet driven magneto-inertial fusion (PJMIF) concept. The project is funded for a 3-year duration. This position primarily focuses on experimental measurements of plasmas from vacuum to atmospheric pressures. Periodic travel to LANL, a few weeks a year is expected to collaborate with LANL researchers on the Plasma Liner Experiment (PLX). The applicant may also participate in the NSF EPSCoR project in plasma science and engineering, FTPP (https://www.uah.edu/cpu2al). CPU2AL is a collaboration between nice Alabama universities and industry partners to conduct research in different areas of low-temperature plasma science and engineering from astrophysics to material science. Multi-disciplinary collaborations across campus are encouraged.

Qualifications and Duties: Successful applicants will have a Ph.D. or equivalent qualifications in physics, engineering, or related fields. Demonstrated experience in experiment plasma research, especially lasers, optical diagnostics, vacuum systems, or pulsed power are highly desired. The researcher will have primary responsibility for the experimental portion of the project. This includes designing, setting up, and running experiments using a Nd:YAG laser to generate a plasma on a solid target in the vacuum chamber inside a pulsed magnetic field to create a magnetized plasma target. A high energy plasma jet created by a coaxial plasma gun will then discharge and collide with the magnetized target. The researcher will apply diagnostics to study the plasma behavior to understand the jet-target interaction. There is a computational component being carried out by a collaborator which the researcher will need to interact with and contribute to as needed. In addition to project duties, the researcher will be expected to work as part of a multidisciplinary team and prepare reports, presentations for conferences, and peer-reviewed journal papers. The researcher will also assist with proposal writing and student mentoring in relevant topics. Occasional travel (few weeks/year) to LANL will be required as part of the project to work with collaborators.

Applications from candidate who are nearing the completion of a relevant Ph.D. degree will be considered. Applications from female, minority, and underrepresented groups are strongly encouraged.

General inquiries and applications can send to Dr. Gabe Xu (gabe.xu@uah.edu). Applications should include a statement of interest and relevant experience, CV, and contact information for 2-3 professional references. References will only be contacted with prior approval of the applicant to maintain confidentiality.

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About the University: The University of Alabama in Huntsville, classified as a Very High Research Activity (R1) doctoral granting institution, offers academic and research programs in the Colleges of Nursing, Business, Engineering, Science, Education, Professional and Continuing Studies and Arts, Humanities & Social Sciences. Huntsville maintains one of the highest per capita incomes and standards of living in the Southeast and has been rated at the best place to live in the United States in 2022. It is a national center of aerospace and high technology research. The Huntsville area is also home to more than 50 Fortune 500 companies. The Redstone Arsenal houses NASA, Army, and FBI agencies and facilities. The university collaborates with NASA Marshall Space Flight Center, Missile Defense Agency, Army Material Command, Army Space and Missile Defense Command, FBI, and many more. New manufacturing facilities include those owned by Blue Origin, GE Aviation, Toyota, and Mazda.

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