Position Overview:

The Technology Innovation Directorate (TID), a directorate of the SLAC National Accelerator Laboratory, seeks a Research Associate for research in next-generation high-power RF sources for accelerator systems. RF power is a dominant cost driver for large-scale science facilities and compact accelerators with industrial and national security applications. The objective of TID's RF power research program is the study, design, fabrication, and test of novel RF source topologies that minimize fabrication costs, maximize DC-to-RF efficiency, and push the boundaries of power density and frequency. The Research Associate will contribute to these efforts under the guidance of Dr. Brandon Weatherford and Professor Sami Tantawi.

The Research Associate will be responsible for fundamental research – computational and experimental – in novel high-power RF vacuum amplifiers. Research areas include low-voltage modular compact klystrons, sources with multi-dimensional electron beams, low-cost fabrication methods for mass production, and fundamental research in novel beam focusing techniques and electron sources. Simulation and design work will be completed using commercially available and in-house electromagnetic FEM and PIC codes. The Research Associate will work with TID's fabrication and support groups to build, cold test and tune, install, and experimentally validate new RF sources and state-of-the-art components.

Note: The Research Associate role is a fixed term staff position. This is a two-year fixed-term appointment with the possibility of extension. Assignment duration is contingent upon project needs and funding.

Applicants must provide evidence of either a recently completed PhD degree or confirmation of completion of the PhD degree requirements prior to starting the position. Applicants should also include a cover letter, a statement of research area including brief summary of accomplishments, a curriculum vitae, a list of publications, and names of at least three references for future letters of recommendation with the application.

Please Note – due to COVID-19 related curtailment of on-site activities, the job duties for this position may be required to be performed from home as needed.

To be successful in this position you will bring:

- Ph.D. in physics, applied physics, electrical engineering, or related fields, and coursework or/and research experience in the following areas:
    - Radiofrequency electronics or devices
    - Beam physics or plasma physics
- Strong experimental, analytical and computation skills, including:
    - RF measurement techniques (e.g., network analyzers)
    - Safe operation of high voltage components
    - Expertise with electromagnetic and/or PIC codes

    - Ability to automate and analyze simulation results with common programming languages (e.g., Python, MATLAB, or Mathematica)
- Effective written and verbal communication skills
- Ability to work and communicate effectively with a diverse population
- Ability to work both independently and within a team environment

SLAC Employee Competencies:

- **Effective Decisions:** Uses job knowledge and solid judgment to make quality decisions in a timely manner.
- **Self-Development:** Pursues a variety of venues and opportunities to continue learning and developing.
- **Dependability:** Can be counted on to deliver results with a sense of personal responsibility for expected outcomes.
- **Initiative:** Pursues work and interactions proactively with optimism, positive energy, and motivation to move things forward.
- **Adaptability:** Flexes as needed when change occurs, maintains an open outlook while adjusting and accommodating changes.
- **Communication:** Ensures effective information flow to various audiences and creates and delivers clear, appropriate written, spoken, presented messages.
- **Relationships:** Builds relationships to foster trust, team collaboration, and a positive climate to achieve common goals.

Physical requirements and Working conditions:

- Consistent with its obligations under the law, the University will provide reasonable accommodation to any employee with a disability who requires accommodation to perform the essential functions of his or her job.

WORK STANDARDS:

- Interpersonal Skills: Demonstrates the ability to work well with Stanford colleagues and clients and with external organizations.
- Promote Culture of Safety: Demonstrates commitment to personal responsibility and value for environment, safety and security; communicates related concerns; uses and promotes safe behaviors based on training and lessons learned. Meets the applicable roles and responsibilities as described in the ESH Manual, Chapter 1—General Policy and Responsibilities: http://www-group.slac.stanford.edu/esh/eshmanual/pdfs/ESHch01.pdf
- Subject to and expected to comply with all applicable University policies and procedures, including but not limited to the personnel policies and other policies found in the University's Administrative Guide, http://adminguide.stanford.edu