

SUBCRITICAL SYSTEMS · JOB OPPORTUNITY

Lead Cryogenic Engineer – Cryomodule



Department *Engineering*

Posted *September 24, 2026*

Location *Austin, TX*

Employment *Full Time*

ABOUT SUBCRITICAL SYSTEMS

Subcritical Systems, Inc. is a venture-backed startup in Austin, Texas building the accelerator driven systems and the only US commercial manufacturer of accelerator cavities. What Space X did for rockets, we plan to do for accelerator cavities and commercialize across applications of power production, medical isotopes, semiconductors and waste transmutation.

We are in the process of building the Energy Amplifier — a novel nuclear fission system in which a particle accelerator drives a subcritical core, making meltdown physically impossible for clean power production. Due to its inherent safety, our system has a more streamlined licensing process. Our founding team includes successful entrepreneurs with a track record of building several multibillion dollar companies in deep-tech, and scientists who were leading U.S. national labs with deep experience in accelerator & nuclear technologies.

We are actively hiring to expand our team as we work toward licensing, regulatory submissions, and construction of our first energy amplifier. More information is available at subcritical.com.

ROLE SUMMARY

This role leads the cryogenic design of Subcritical Systems' SRF cryomodules - the cryogenic two-phase helium and nitrogen distribution and heat exchanger systems enabling our particle accelerators. These systems include bath cooled accelerating devices, thermal shielding and multilayer insulation, mechanical supports that accommodate thermal contraction from 300 K to 2 K, vacuum systems, and the cryogenic distribution and subatmospheric pumping that hold cavity operation at a stable 2-4 K. You will be the senior technical authority for cryomodule cryogenics, working closely with SRF, mechanical, RF, controls, and manufacturing engineers to carry designs from concept through fabrication, cold testing, and commissioning.

You'll also feed your engineering judgment, physical constraints, and test data into ATLAS, our internal AI-assisted engineering platform, and review its outputs before they reach detailed design or the manufacturing floor.

KEY RESPONSIBILITIES

- Own the cryomodule's cryogenic design, pressure systems safety, and distribution systems.
- Perform and review thermal, structural, and fluid analyses to size cooling circuits, set heat-load budgets across the 2 K, 4 K, and 40–80 K operating components.
- Define and integrate interfaces with other cryomodule subsystems.
- Develop drawings, specifications, calculations, and test procedures; and feed results back into future designs.
- Set requirements for safe cryomodule transport and handling protecting the cryogenic system.
- Translate validated models and test data into ATLAS, and review new design outputs before they proceed to fabrication or testing.
- Represent cryogenic engineering in design and program development, mentor engineers and junior staff, and promote a proactive safety culture.

QUALIFICATIONS

Required

- Bachelor's degree in Mechanical, Cryogenic, or a related engineering discipline; master's degree preferred.
- 4+ years of cryogenic engineering experience directly relevant to this role, or 10+ years of broader engineering experience with substantial cryogenic exposure.
- Experience taking cryogenic mechanical systems from concept through commissioning.
- Working knowledge of thermodynamics and heat transfer, and fluid flow.
- Ability to perform and interpret thermal, structural, and fluid analyses using CAD and simulation tools to set engineering requirements and acceptance criteria.
- Demonstrated ability to lead multidisciplinary technical work while staying hands-on, mentor others, and produce clear specifications, design reports, and test plans.

Preferred

- Experience with SRF cryomodules, superconducting accelerators, or comparable cryogenic systems.
- Experience with cryomodule design, fabrication, assembly, cold testing, and/or cryogenic distribution hardware (valves, transfer lines, heat exchangers).
- Experience moving prototype cryogenic systems into repeatable manufacturing processes.
- Familiarity with computational design tools, simulation-driven optimization, or AI-assisted engineering workflows, including evaluating their outputs with sound engineering judgment.

BENEFITS

Benefits: We offer health, dental, and vision insurance.

LOCATION & WORK POLICY

This role is fully in person in Austin, Texas. Our facility is located next to Austin Airport.

HOW TO APPLY

Apply on LinkedIn or submit your resume and a brief cover letter to careers@subcritical.com with the subject line "Lead Cryogenic Engineer – Cryomodule - Application". Applications are reviewed on a rolling basis.