

TEST & INSTRUMENTATION ENGINEER

Boston Area, MA

Giving everyone in the world access to clean, reliable, affordable energy will require substantial expansion of global electricity transmission networks. VEIR is developing a new generation of High Temperature Superconductor (HTS)-based transmission lines, enabling long distance, reliable, low loss, cost-effective power transfer in far smaller right-of-ways. VEIR's innovations overcome the main barriers to transmission expansion, enabling the world to access the very lowest cost renewable power.

The **Test & Instrumentation Engineer** will be responsible for setup, operation and maintenance of VEIR's research infrastructure. The engineer will work with VEIR's technical team to procure and commission instrumentation hardware and software solutions, develop calibration procedures, and design comprehensive data management processes. The test engineer will assist in executing test plans and protocols supporting all aspects of our technology development.

DUTIES & RESPONSIBILITIES:

- Design, construction, and maintenance of instrumentation for VEIR's cryogenic nitrogen flow and heat transfer test beds
- Design, construction, and maintenance of instrumentation for low noise electrical measurements of HTS wires and cables
- Define the requirements for test hardware and software solutions. Lead specification, selection, integration, functional verification, and commissioning of test equipment, monitoring/controls equipment, and data acquisition systems (DAQ)
- Design, build, modify, operate, and troubleshoot automated experiment control systems
- Plan and perform periodic maintenance on all VEIR instrumentation systems
- Collaborate with the Engineering Team leads to develop rigorous test plans and methodologies for evaluating VEIR subsystem prototypes in VEIR's high-pressure, high flow, cryogenic testbeds.
- Support execution of mechanical and electrical tests
- Provide direction, instructions and training to junior engineers and technicians to implement test procedures and collect test data
- Support Engineering Team leads in the execution of validation and certification test plans with external test laboratories

MINIMUM EDUCATION/EXPERIENCE:

- Bachelor's Degree in related field with at least 3 years experience in a scientific testing environment
- Demonstrated creativity in selecting, designing, building, and/or integrating test and measurement instrumentation systems
- At least 3 years experience building automated experiment control and data acquisition infrastructure (using LabView or similar)
- Experience with low noise, high precision measurements (e.g. thermometry, flows, pressure, voltage)

PREFERRED EDUCATION/EXPERIENCE:

- Master's degree in related field with emphasis on precision test and measurement in scientific testing environments
- Experience with test and measurement instrumentation in cryogenic environments
- 5+ years experience in building and maintaining test and data acquisition infrastructure (using LabView or similar)
- Experience building scalable systems for large scale measurement data acquisition, management and archiving
- Experience with process automation in research environments

REQUIRED SKILLS:

- Ability to build and maintain detailed understanding of VEIR technology including laboratory test procedures
- Ability to design, construct and maintain infrastructure for precision measurements, laboratory automation, and data acquisition
- Ability to rapidly troubleshoot instrumentation problems as they arise
- Strong verbal and written communication skills
- Ability to work in a fast-paced, team-oriented environment
- Ability to work with minimal supervision; self-motivated and directed

PREFERRED SKILLS:

- Familiarity with National Instruments platforms (DAQ, PLC, high speed data acquisition)
- Extensive knowledge of instrumentation and sensors including pressure transducers, thermocouples, RTDs, strain gauges, accelerometers, flow meters, load cells, relays, solenoid valves, etc.
- Experience testing cryogenic thermal management and fluid flow systems
- PLC Programming and Cryogenic Instrumentation experience