SR. ENGINEER, HTS CABLE SYSTEMS ENGINEERING

Woburn, 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 **Sr. Engineer, HTS Cable Systems Engineering** will assist in the design, development and testing of low loss, high ampacity high temperature superconductor-based power cables, cable splices, and terminations. This position will have lead responsibility over the development of one or more HTS subsystems.

DUTIES & RESPONSIBILITIES:

- Provide engineering expertise in high temperature superconducting cables for power transmission applications
- Lead the development and utilization of engineering analysis techniques, models, and simulation tools to design and continuously improve the performance, reliability, lifetime, and cost of VEIR's HTS-based power transmission cables and related subsystems
- Lead the iterative design, build, and testing of low loss ac and dc power cables, cable splices, and terminations
- Lead the review, interpretation, and visualization of experimental data; use data to validate and improve designs and strategically plan subsequent prototype design iterations and experimental campaigns
- Mentor junior engineers; contribute to building high performance team culture and work processes
- Evaluate HTS material from vendors and develops methods for material characterization and acceptance
- Collaborate with broader VEIR team to integrate HTS cable and cable accessory designs with broader VEIR engineering and product development efforts, including thermal and high voltage system designs
- Identify, evaluate, negotiate, and liaise with subcomponent suppliers, academic collaborators, external consultants
- Participate in documenting innovations and filing patent applications for key VEIR innovations

MINIMUM EDUCATION/EXPERIENCE:

- Bachelor's degree in mechanical engineering, electrical engineering, or applied physics with at least 3 years engineering experience working with high temperature superconducting tapes and/or systems
- Demonstrated creativity and experience in design of HTS systems (cables, magnets, generators, etc.)
- Strong experimental background evaluating the performance of systems utilizing high temperature superconducting tapes
- Specialized technical experience applicable to the position includes:
    - Hands on experience in electrical characterization of high current conductors and/or cables
    - Experience with integrating high accuracy sensors and data collection systems with cryogenic testbeds
    - Experience interpreting experimental results and correlating results with model predictions

PREFERRED EDUCATION/EXPERIENCE:

- MS or PhD in mechanical engineering, electrical engineering, or applied physics with at least 5 years engineering experience working with high temperature superconducting tapes and/or systems
- Strong background in analytical design of low loss, high ampacity ac and dc HTS power cables
- Strong background in experimental testing of low loss, high ampacity ac and dc HTS power cables
- Demonstrated success contributing to the commercialization of new products utilizing high temperature superconductors

REQUIRED SKILLS:

- Ability to build and maintain detailed understanding of VEIR technology including design specifications and constraints
- Ability to specify, select, and/or design systems to characterize the performance of high temperature superconducting material
- Ability to create new system designs and/or improve existing system designs with a focus on achieving increased performance, improved reliability, reduced cost, and/or improved manufacturability
- Strong verbal and written communication skills; Ability to clearly communicate goals, findings, and issues
- Ability to work in a fast-paced, team-oriented environment
- Ability to work with minimal supervision; self-motivated and directed

PREFERRED SKILLS:

- Ability to use CAD software tools for 3D Modeling (SolidWorks)
- Ability to use laboratory automation and data collection systems (e.g. LabView)