
Job Description

Job Vacancy : Material Scientist

Date: 05/18/2023

Location: Boston, Massachusetts

Salary: Highly Competitive Plus Benefits

Hours: Full Time

Contract Type: Permanent

Reporting to: Chief Technical Officer and VP of HTS Magnet Program

About Type One Energy

Fusion energy is the clean power at the center of stars. Mastered here on earth, its unique advantages will rapidly disrupt carbon-based fuels to become the primary form of baseload power on the planet.

Type One Energy is a fusion energy startup applying innovations in additive manufacturing, quasi-symmetry, and HTS magnets to commercialize an economical stellarator power plant. The stellarator is an innovative marriage of elegant physics, engineering artistry, and practical utility.

Founded by experts and technology from the University of Wisconsin, Type One Energy is a world leader in stellarator R&D with the mission to provide clean and affordable fusion power to every city across the globe.

In collaboration with our public and private partners, we are uniting the outstanding operation of a stellarator with breakthroughs in theory, additive manufacturing, and high temperature superconducting magnets. We are producing an economical fusion power plant to be deployed worldwide in the shortest amount of time.

About the role

Type One Energy is seeking a highly skilled and experienced Materials Scientist with expertise in superconducting tape and materials to join our team. Ideally the candidate will have experience in the development and testing of superconducting tapes. As a Materials Scientist, you will play a vital role in the development and production of High-Temperature Superconducting (HTS) magnets from scratch.

Your extensive knowledge of superconducting materials, along with your understanding of magnet design and fabrication techniques, will be critical in advancing our research and contributing to the success of commercialising an economical stellarator power plant.

Responsibilities

- Conduct in-depth research and analysis on superconducting materials, including their composition, properties, and behaviour under different conditions.
- Collaborate with the Engineering Team to contribute to the design of HTS magnets from scratch, taking into consideration factors such as magnetic field strength, mechanical stability, and cooling requirements.
- Apply your knowledge of superconducting materials to optimize magnet performance and manufacturability.
- Develop and implement novel fabrication techniques for the production of HTS magnets.
- Oversee the fabrication process, ensuring adherence to quality standards and maintaining strict control over material properties and magnet performance.
- Perform comprehensive testing and analysis of the fabricated magnets, including critical current measurements and magnetic field mapping.
- Continuously improve magnet fabrication processes to enhance efficiency, reliability, and cost-effectiveness.
- Prepare technical reports, presentations, and publications to disseminate research findings and contribute to the scientific community.
- Work closely with a multidisciplinary team of Scientists, Engineers, and Technicians to foster a collaborative environment.
- Collaborate with external partners, including academic institutions and research organizations, to explore potential collaborations and stay at the forefront of HTS magnet technology.

Required Qualifications and Experience

- Strong educational background in Materials Science, Physics, or a related field with a strong focus on superconducting materials and tapes.
- Proven hands-on experience in superconducting materials research or HTS magnet development.
- Demonstrated expertise in fabrication, and testing of superconducting materials (ideally REBCO).
- Proficiency in magnet design software and experience in designing and fabricating high-performance HTS magnets is desirable.
- Familiarity with magnetization techniques, magnet assembly, and soldering methods is desirable.
- Experience in cryogenic techniques and magnet performance testing is highly desirable.
- Excellent analytical and problem-solving skills, with the ability to troubleshoot complex issues and propose innovative solutions.
- Attention to detail in experimental work and data analysis.

To Apply

Please send your CV and cover letter to Sam Belazka at sam.belazka@typeoneenergy.com and for more information please visit our website at www.typeoneenergy.com.