

## **Modern Electron is looking for Computational Physicist**

We are a start up in Seattle dedicated to generating cheap, distributed, and reliable electricity for all. Expensive mechanical engines and turbines based on 19th-century technology are still used to generate >80% of today's electricity worldwide. Modern Electron seeks to revolutionize the industry with direct heat-to-electricity generators. >\$10 MM venture capital is committed to our vision. We do novel work at the intersection of nanofabrication, material science, thermal engineering, and vacuum science.

Visit us at <http://modernelectron.com/join-us/> to find out more.

A highly qualified computational physicist is needed to work on the product R&D team, and will be responsible for simulation and design of electronic devices using the company's groundbreaking technology and processes. Particular focus will be on developing and applying advanced computational methods and tools for electron beam dynamics simulations, and studying the interaction of low-energy vacuum electrons and ions with nanoscale device architectures.

Modern Electron has an immediate opening for a computational physicist. A highly qualified computational physicist is needed to work on the product R&D team, and will be responsible for simulation and design of electronic devices using the company's groundbreaking technology and processes. Particular focus will be on developing and applying advanced computational methods and tools for electron beam dynamics simulations, and studying the interaction of low-energy vacuum electrons and ions with nanoscale device architectures. You will work with a team of physicists, chemists, material scientists, electrical engineers, and technicians. This position will report to the CEO.

Modern Electron is a start-up company dedicated to generating cheap, modular, and reliable electricity for all. Expensive mechanical engines and turbines based on 19th-century technology still generate the majority of the power used worldwide. We seek to replace them with paper thin heat-to-electricity generators. Venture capital funding is committed to our vision. We're at the early stage of commercialization, with enormous potential for learning, impact, and growth in a small and collaborative team setting. We value our ability to move fast to outpace larger companies and achieve what they cannot.

### **ESSENTIAL SKILLS, KNOWLEDGE, AND ABILITIES:**

- Significant experience with computer-based design and analysis of experiments.
- Experience in computational physics simulations in at least one of the following areas: plasma physics, accelerator physics, charged particle beams, gas breakdown, high-power microwave systems, pulsed power systems.
- Experience conducting particle-in-cell simulations using parallel computer codes.
- Familiarity with high-level programming languages (C/C++, Python) and numerical methods.

### **DESIRED SKILLS AND EXPERIENCE:**

- Experience designing particle-in-cell simulations in large scale plasma codes.
- Proficiency in Parallel Processing (MPI, Open MP), GPU Accelerators (CUDA, Open CL).
- Experience crafting computational methods and capabilities for multi-physics beam dynamics simulation.
- Demonstrate subject matter expertise in plasma physics and solid state physics.

### **MINIMUM QUALIFICATIONS:**

- Ph.D. in Physics, Plasma Physics, or related field.
- Demonstrated experience with electron physics simulations via particle-in-cell codes.

**PREFERRED QUALIFICATIONS:**

- At least 6 years of post-bachelor (Ph.D. + work) experience with electron physics simulations.
- We are an equal opportunity employer