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Electromagnetic Launch Design Engineer Job Ref 136

Job Description

We are looking for inquisitive engineers and scientists of all levels to join our electromagnetic launch design team. First Light Fusion operates a series of extremely high-energy pulsed discharge machines, designed to launch projectiles at 10+ km/s as part of our novel approach to fusion. Over the next five years this set will be expanded to include Machine 4, expected to be the largest pulsed power machine in the world.

In this role, you will use our in-house magneto-hydrodynamics codes to understand how to take the energy delivered by our machines and convert it to projectile motion. You will invent new ideas and approaches, utilising a machine-learning based approach to optimise concepts. A key part of your role will be to solve the technical challenge of how a projectile-based approach can be used within a future fusion power plant.

Responsibilities will include:

- Design and development of novel electromagnetic launch concepts using our in-house hydrodynamic and magneto-hydrodynamic codes, and machine learning-based optimisation.
- Using Python and other analytical tools to understand simulation results, identify trends and spot opportunities in designs.

Essential

- Degree in physics, engineering or similar.
- A creative, problem-solving mindset.
- Experience using simulation tools to solve technical problems.
- Ability to perform calculations and analysis associated with electrical engineering.
- Ability to work effectively as part of a multidisciplinary team.
- Strong communication and interpersonal skills.
- Good programming skills.





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Desirable

- Experience with machine learning and other advanced optimisation methods.
- Programming experience in Python or Fortran.

Benefits

- Competitive salary
- 25 days annual leave + bank holidays
- Free lunch, snacks, and soft drinks
- Cycle to work scheme
- Electric vehicle car scheme
- Relocation support
- Flexible working
- Generous share options scheme
- Health and wellbeing scheme
- 8% employer pension contribution without matching requirements
- Enhanced maternal / paternal and sick leave

Additional information

How to apply

Please send your CV to careers@firstlightfusion.com quoting the job title in the subject. If you don't hear back from us within four weeks, it means that unfortunately your application was unsuccessful at this time.

Informal enquiries can be sent to careers@firstlightfusion.com.

Our recruitment process

- We typically conduct two separate interviews, each one about sixty to ninety minutes long. The first interview aims to understand how your skills match the requirements for the job. The second interview is more focused on your competencies, and your aspirations.
- We will try to understand the value you will add to First Light, and how you can thrive and be happy with us. There will be opportunity to ask us as many questions as you like.
- We do not have a dress code at First Light and regardless of seniority there is a good mix of t-shirts, trainers, shirts and blazers. For your interview, please dress in whatever makes you feel most confident and comfortable.
- To help with coordination issues, we may arrange so that the two interviews are organised on the same day. We will also reimburse reasonable expenses you incur to come to talk to us.
- If you are the successful candidate, we will send you an offer letter and, once agreed, a contract.

Our commitment to equality, diversity, and inclusion

We are a small company with a huge mission. The only important aspect for the team, and for everyone, is the contribution they can make. Our selection process and requirements for

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career progression disregard gender, gender identity, race, disability, colour, religion, and all other aspects of diversity that make us all humans. Diverse teams have been proven to be better and we strongly believe it. We are not perfect, but we strive to be.

Information for recruiters

We work with a trusted network of recruiters, therefore CVs sent by other recruitment agencies will not be considered. If the company receives a CV from both the direct applicant and a recruitment agency, the CV will be treated as a direct application by the individual only. Unsolicited contact from recruitment agencies will be disregarded.

First Light Fusion

We are a lean, focused, and agile company researching energy generation by inertial confinement fusion. We spun out from the University of Oxford in June 2011 and are based near Oxford. First Light continues to collaborate closely with the academic community, both in the UK and internationally. The company is well-funded by both institutional investors and private individuals.

Inertial confinement fusion for energy generation is a well-established research field and is being pursued in many laboratories worldwide, most notably in the US at the National Ignition Facility. We are exploring a number of alternative research directions that harness the same fundamental physics, with the prime focus being power generation. Our work to-date has included theoretical analysis, detailed numerical simulation, and experimental validation. We have a clear vision of the pathway to a power plant.

We really believe fusion will be solved in the 2020s. If it is solved by us, fantastic, if it is solved by someone else, still great!

