



first light

Electro-Mechanical Engineer

Job Ref 118

Job Description

We are growing the Pulsed Power team, who is responsible for the design, construction, and operation of our pulsed power fusion machines. The next major step for First Light is to create what is expected to be the largest pulsed power facility in the world by some margin, containing a circa. 100 MJ, 10 MV, 50 MA device delivering its energy to advanced experimental loads within the order of 100 ns timescales. This is known as Machine 4 and has a growing profile in the international pulsed power community.

Responsibilities will include:

- Concept generation, simulation, calculation informing high-level and detailed design, with the production of requirements, specifications, and technical reports.
- Supplier engagement for equipment procurement and component design.
- Experimental development, prototyping, oversight, and hands on support to installation, commissioning, and testing.
- The long-term horizon includes operation and development of the Machine 4 facility, alongside other major engineering programs.
- Additional opportunities include supporting and managing experiments and shot operations on our existing facilities including Machine 3.
- Collaborating across the company with other technical teams, physicists, specialist technicians, machine workshop, and operations.
- Travelling to conferences, to engage with suppliers and collaborators.

Essential

- Degree in Engineering, Physics, or similar.
- Ability to perform calculations and analysis associated with electrical engineering.
- Knowledge of health and safety matters relating to pulsed power systems.
- Strong communication and interpersonal skills, including interaction with a wide range of technical specialists and stakeholders.
- Ability to manage and prioritise time effectively to work under pressure to tight and evolving deadlines.

Desirable

- While specific experience may be helpful, we also seek candidates from other technical fields and industries who have transferrable experience and a keen interest in pulsed power technologies.
- We rely on a superb team of specialist technicians, but excellent electrical / mechanical practical hands-on skills in the laboratory reflect well on a candidate and will be valuable to a greater or lesser degree depending on the role.
- Circuit or electromagnetic simulation tool experience, such as COMSOL.
- CAD design tool experience, such as SolidWorks.

First Light Fusion Ltd

Unit 10, Oxford Pioneer Park
Mead Rd., Yarnton, Oxford
United Kingdom
OX5 1QU

Company No – 07555858
www.firstlightfusion.com





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- Experience and enthusiasm for systems thinking and a requirements-based approach.
- Excellent technical writing skills.

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
- 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 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](#)

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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!

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