Graduate Target Design Engineer
Job Ref 97

Job Description

Fusion power has the potential to provide the ultimate source of green, low-carbon energy. First Light Fusion is working on a novel approach to inertial fusion, where a small high-velocity projectile impacts into a target containing fusion fuel. Targets must harness the energy applied by the projectile, and focus it down to create the temperatures and densities required for fusion. We are looking to recruit a scientist/engineer to help us to design these targets. In this role you will be encouraged to work creatively to find innovative solutions to complex technical problems. Your work will directly influence the shape of our fusion experiments. You will work regularly with scientists from a range of different specialisms, which will give you the opportunity to develop and apply your technical skills in a variety of areas.

Responsibilities will include:

As a target design engineer, you will:

- Be part of a team that creates and develops target designs, aiming to achieve the highest possible fusion yields from First Light Fusion's driver machines
- Use our in-house hydrodynamic and magneto-hydrodynamic codes to invent new targets and develop current ones
- Develop our understanding of the physical processes at work within our targets
- Use Python and other tools to analyse results and identify trends
- Assist with the modelling and design of experiments in our lab
- Provide feedback to improve our code and help identify bugs

Essential

- Degree in engineering, physics or other relevant subject
- Ability to work effectively as part of a multidisciplinary team
- Fast and creative problem-solving skills
- Evidence of how you have used your technical knowledge to solve problems, e.g. during your final-year project or work experience
- Good communication and interpersonal skills
- Experience programming in Python

Desirable

- Experience working on inertial confinement fusion or fluid dynamics
- Knowledge of software engineering good practice
- Appreciation of the numerical methods used in hydrodynamics codes
- Experience with machine learning and other advanced optimisation methods
- Programming experience in C++ or Fortran

Benefits

- Very competitive salary
- 25 days annual leave (increasing to 28 with time in service) + bank holidays
- 8% employer pension contribution without matching requirements
- Relocation support
- Flexible working
- Generous share options scheme
- Free lunch and soft drinks
- Enhanced maternal / paternal leave
- Enhanced sick leave

Additional information

How to apply

Please send your application and 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 may also be addressed to careers@firstlightfusion.com.

The interview process

We typically carry out two separate interviews, each one about sixty to ninety minutes long. The first one aims to understand how your skills match what is required for the job and the discussion will be focused on your areas of expertise. If successful, you will be invited to the second interview, which is more focused on your personal skills, and how your objectives align with the company mission and values. We 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.

If you are invited to the second interview, it's probably time to warm up two of your referees, as we may ask you to put us in touch with them. If you are the successful candidate, we will send you an offer letter and, once agreed, a contract.

If you are invited to an interview, we will certainly get back to you to let you know the outcome.

To help with logistics issues, we can 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.

We don't 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.

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 each individual, 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're 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. In the event that 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 work 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, perhaps 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 an increasingly clear vision of the pathway to a power plant.

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