

Lead Scientist – Target Design

Job Ref 65

Job Description

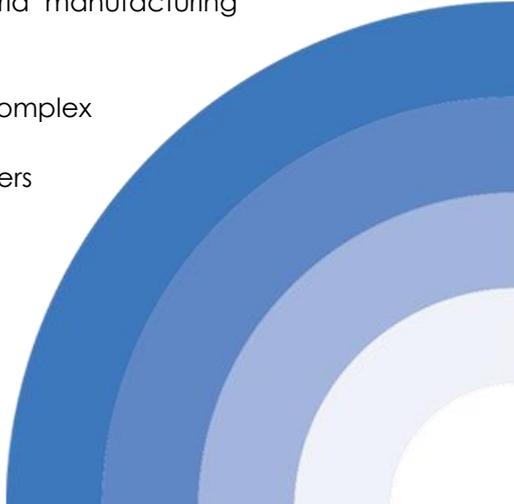
In this role you will work with the CTO to lead First Light Fusion's target design efforts. Everyone in the technical team at First Light is encouraged to contribute to target design, and our project management approach brings together contributions on target design from across the team. This new role is not a change of approach, we still believe diversity of thought in target design is very valuable but will enable a higher-level overview of all target design activity. You will work directly on target design and optimisation but will also facilitate and guide the rest of the team to develop their own ideas and work more effectively.

You will work closely with the numerical team, contributing target design expertise to help them prioritise new features and physics in the simulation tools. Your input will also be required for bug triage. You will help the rest of the team to understand the work of the numerical team and help them to ensure their target design efforts always use the most appropriate tools and approaches.

You will also work closely with the experimental team. This will involve contribution to diagnostic target design, particularly helping to understand the potential performance impact of invasive modifications such as holes on target performance. It will also involve contribution at the manufacturing stage, helping to understand the potential impact of non-ideal manufacturing features.

You will directly manage a small team of scientists dedicated to target design. This team is expected to expand as the company grows. Some experience of project management and leadership will be helpful but prior experience of line management is not required. You will be supported in the development of this new team by the executive and with appropriate training.

Essential

- Degree in physics, mechanical engineering, or another relevant subject
 - Clear grasp of the physics of inertial confinement fusion
 - Proven track record in using simulation tools for design invention and optimisation
 - Appreciation of the issues of manufacturing and assembling cm-scale multi-component parts with micron-scale features
 - Experience of design optimisation constrained by real-world manufacturing issues
 - Strong python skills
 - Excellent technical communication skills, an ability to distil complex physics and dynamics into coherent, simplified narratives
 - Open, positive, and encouraging manner when helping others in the team explore and optimise their target design ideas
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- Project management and leadership experience; direct line management experience is not essential, appropriate training and support is available

Desirable

- Knowledge of software engineering good practice
- Appreciation of the numerical methods used in target simulations, for example, one or more of hydrodynamics, conduction, or radiation transport
- Appreciation of the importance and impact of material specific data / microphysics on simulated performance
- Experience with advanced optimisation methods
- Skills with C++ and/or Fortran
- Understanding of diagnostic methods for high-energy density physics
- Knowledge of intellectual property good practice

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.

