

Theoretical Physicist in HEDP

Job ref. 30

Vacancy Specification

First Light Fusion is looking for theoretical physicists specialised in high energy density physics (HEDP) with experience in transport processes in an ICF context.

First Light Fusion has commissioned the UK's fastest two-stage gas gun and is experimentally producing inertially confined plasmas at conditions where transport processes are significant. In parallel, we are designing and constructing the next device that will launch even faster projectiles to produce higher densities and temperatures in our targets, and the simulations team is building from the ground up, a radiation-hydrodynamics code with front-tracking and adaptive mesh refinement. Together, we are pushing a well-funded and innovative agenda for fusion power generation.

The successful candidate(s) will bring their experience of transport processes in an ICF context to lead the theoretical underpinning of First Light's approach. We are looking for someone with a deep understanding of the loss mechanisms in fusion relevant plasmas, while also being able to use that knowledge to solve previously unseen challenges.

Essential

- PhD in physics or related field
- Comprehensive knowledge of high energy density physics
- Passion for fusion and for taking a bold approach to a high-risk transformational technology
- Demonstrated self-motivation, enthusiasm to work in a dynamic team environment and evidence of taking the initiative
- Strong communication and interpersonal skills

Desirable

- Experience in computational modelling of complex systems, particularly simulations solving plasma physics equations with non-linear loss mechanisms included
- Working knowledge of numerical methods for solving parabolic PDEs
- Knowledge of shock physics or hydrodynamics
- Understanding of microphysics models, such as opacity, applicable to HEDP

Benefits

A competitive package, opportunity to participate in the company's share option scheme, and relocation expenses.

How to apply

Please upload a covering letter / supporting statement and CV to www.firstlightfusion.com/careers quoting the job reference. The post will remain open until filled. Two referees should be available on request. Informal enquiries may also be addressed to careers@firstlightfusion.com.



CVs sent by recruitment agencies will not be read, and 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.

We are an equal opportunities employer. This role is subject to background checks.

First Light Fusion

First Light Fusion Ltd is a lean, focused and agile corporation researching energy generation by inertial confinement fusion. The company was spun out from the University of Oxford in June 2011 and is 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. First Light is exploring a number of alternative research directions that harness the same fundamental physics, with the prime focus being power generation. First Light's work to-date has included theoretical analysis, detailed numerical simulation and experimental validation. This has allowed description of the accessible parameter space and has led to a clear vision of the pathway to fusion.

First Light has also considered the costs and engineering practicalities of a reactor implementing its technology and can articulate a number of advantages over other approaches. Additionally, the energy focusing processes being pursued form the foundations of a new technological platform where secondary opportunities exist in a number of alternative applications, for example material processing and chemical manufacture.

