

Senior Scientist (Numerical Physics)

Job ref 42

Vacancy Specification

The successful candidate(s) will bring their experience and expertise of physics, simulations and computational methods to the numerical tools underpinning First Light's approach. We are looking for someone with a deep understanding of numerical methods and multi-physics approaches, who will be able to use that knowledge to solve previously unseen challenges. We would be particularly interested to hear from candidates with experience of interface tracking methods applied to multiphase flows.

Our primary numerical physics capability is an adaptive front-tracking hydro-code, with coupled conduction, radiation and microphysics models. The code is core to the business plan and a very important company asset. The successful candidate(s) will contribute to the development of this code, as well as adding further physics such as MHD. It is also expected that you will work closely with the in-house experimental team to provide simulation support and perform code validation.

The team takes an agile approach using the Atlassian toolset.

Essential

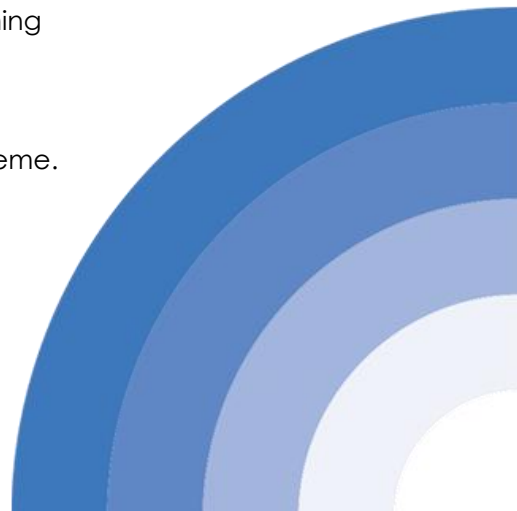
- PhD (or equivalent experience) in physics, engineering, maths, or related field
- Comprehensive knowledge of physics
- Significant experience in computational modelling of complex systems, particularly simulations solving hydrodynamic or plasma physics equations
- Experience of numerical model selection, architectural design, and implementation
- Strong grasp of software engineering best practise
- 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 with interface tracking methods and multiphase flows
- Working knowledge of numerical methods for solving hyperbolic and parabolic PDEs
- Knowledge of shock physics and compressible flows
- Demonstrated technical leadership
- Experience with C++, Python and object-oriented programming

Benefits

A competitive package and entry into a company option's scheme.
Relocation packages will be considered.



How to apply

Please send a covering letter / supporting statement and CV to careers@firstlightfusion.com quoting the job title in the subject. 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.

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.

