

OXFORD SIGMA JOB DESCRIPTION

10 January 2025

Job title:	Fusion / Nuclear Engineer
Job location:	Oxford City Centre, UK
Hours:	Full-Time (37.5 hours per week) or Flexible
Salary:	Competitive
Reference:	OS-JA-FUSENG-02

Company

Our vision is to tackle energy security and climate change by accelerating the commercialisation of fusion energy. **Our mission** is to deliver materials technology, materials solutions, and fusion design services in order to assist fusion delivery.

About us: We are a small, organically grown, company owned and operated by scientists and engineers, with our roots and headquarters in Oxford. We have established ourselves as a highly respected technical service supplier for the fusion energy market, within both the private and public sectors, nationally and internationally. We are equally a research and technology development company developing novel disruptive materials and design technologies to help in the required fundamental shift for the world's clean energy future.

Role

We are expanding our wider team to support the business in bringing materials and technology solutions for fusion. This role could include the following duties, to be defined based on person aptitude and experience:

- Developing Oxford Sigma's fusion technology in breeder blankets, first-wall, and divertor technology with a focus on commercialisation through engineering, modelling and simulation testing, often from a first principles basis.
- Leading fusion technology contracts with public fusion institutions and private fusion companies in markets such as UK, USA, EU and Asia. This work can cover topics such as in-vessel component design, materials development, neutronics, CAD, CFD/MHD, tritium engineering, safety considerations, and regulatory affairs.
- Join the core team that develops the business and its future direction.
- Supporting contract bidding, and managing new and existing contracts.
- Assisting with grant submissions.
- Working in a team, as well as independently.
- Being naturally inquisitive and having the ability to work collaboratively with a range of clients and skills levels.
- Pushing scientific and technical boundaries.
- Representing the company at public events such as conferences, which could include public speaking.
- Line management and mentorship of junior employees.

Qualifications & experience

Ideally, you will have some of these:

- Bachelors or Masters in Mechanical, Aerospace, Chemical, Materials, Nuclear, Physics, or any other related engineering topics, or demonstrable equivalent experience.

- >2 years' experience in chemical, nuclear, mechanical, physics or fusion engineering.
- Excellent verbal and written communication and presentation skills.
- Ability to thrive in a challenging environment.
- PhD in physics, materials, nuclear engineering, or fusion energy.
- Knowledge of fusion technologies and the engineering challenges covering primarily Magnetic Confinement Fusion and Tokamak systems, but also other fusion reactor designs and auxiliary systems.
- Working understanding of plasma physics and/or electromagnetism.
- Experience in neutron transport codes, such as OpenMC and Monte Carlo N-Particle (MCNP).
- Working knowledge of lithium-based coolants, molten salts, or gas cooled materials properties, uses, and applications.
- Experience in computational fluid dynamics, magnetohydrodynamics, or structural engineering.
- Experience working with object-oriented programming languages typical in scientific environments (such as Python and C++).
- Working experience in Computer Aided Design (CAD).

Eligibility

The candidate must have the right to work in the UK.

Our benefits

- 28 days annual leave pro-rata
- Company bonus scheme
- Flexible working around core hours
- Company pension scheme
- Cycle to work scheme
- Enhanced parental pay
- Inclusion in the Business Health Scheme
- Assist and support chartership progression with the appropriate body.
- Commitment to professional development and formal training.

Additional Information

Underrepresented people are less likely to apply for engineering roles if they do not meet 100% of the job requirements. We are actively seeking these kinds of applicants and believe in hiring people not checklists. If you are interested but unsure if your experience aligns, please get in touch with Mark Anderton (mark.anderton@oxfordsigma.com) the hiring manager, to discuss if this role or others we are developing may match you as a person.

Apply

We'd love to understand more about you, and why you want to get involved in fusion.

Submit your CV and covering letter (both in PDF format) at www.oxfordsigma.com/careers/ quoting the job reference number.

Applications will be reviewed fortnightly, until the position is filled, or until **17:00 (GMT) 31st January 2025** – whichever comes first.