

Experimental physicist job specification

Magdrive is looking to hire an experimental physicist to help develop a revolutionary, next-generation spacecraft propulsion system. The Magdrive propulsion system delivers an unmatched level of thrust (>100 mN/kg) with extraordinary efficiency (>2000 s) that will unlock new capabilities for spacecraft and enable entirely new industries in satellite servicing, orbital assembly and interplanetary transport.

You will play a pivotal role as one of the first employees of Magdrive, which brings enhanced freedom, responsibility and potential for career growth. The solutions you develop will directly shape the development of the Magdrive propulsion system and have a significant impact on the future of space travel. You will be responsible for the development of plasma diagnostics and running experiments on prototype thrusters. A strong analytical background is required to compare experimental data to simulations in order to identify potential issues and improve the thruster design.

Responsibilities

- Design and build plasma diagnostics
- Run experiments on plasma propulsion systems
- Performing simulations of the plasma dynamics inside the thruster
- Comparing experimental data to simulations to improve thruster design

Essential

- PhD in plasma physics, spacecraft propulsion or similar
- Experience with plasma diagnostics, e.g. laser interferometry, langmuir probes and Faraday cups
- Strong knowledge of electromagnetism and plasma physics
- Experience with Python and data analysis
- Passion for space travel and for taking a bold approach to a transformational technology
- Fast and effective problem solving skills
- Ability to work under pressure to tight deadlines
- Strong communication and interpersonal skills

Desirable

- Experience working with vacuum systems and an understanding of the good working practices
- Experience with simulation codes (PIC, MHD, FEA)
- Experience working with electric propulsion
- Experience with pulsed power electronics

Benefits

- Salary £40k - £60k per annum (DOE)
- 25 days annual leave + bank holidays
- Flexible and remote working
- Support for home office setup
- Generous share options scheme