



**British
Geological Survey**
Expert | Impartial | Innovative

Geomagnetic Electronics Engineer

UKRI – NERC – BGS

The Lyell Centre, Edinburgh

£30,782 to £33,459 per annum (depending on qualifications and experience)

Full-Time – 37 hours a week (a range of flexible working options may be available)

Permanent Appointment

About us

The British Geological Survey (BGS) is an applied geoscience research centre that is housed in UK Research and Innovation (UKRI) and affiliated to the Natural Environment Research Council (NERC). It is a world leading geological survey that provides a core science mission to inform government of science related to the subsurface and its interfaces and also undertakes applied research for solutions to earth and environmental processes, both in the UK and globally. It is funded directly by UKRI as well as through research grants and via private sector contracts.

BGS has an annual budget of approximately £60 million and employs 650 people. It has two main sites, a head office in Keyworth near Nottingham and the Lyell Centre, which is a joint collaboration with Heriot Watt University in Edinburgh. BGS works with more than 150 private sector organisations as well as having close links with 40 universities and sponsors approximately 100 PhD students each year.

We have an opportunity for a highly motivated and experienced Geomagnetic Electronics Engineer based in the BGS offices in Edinburgh, which are located on the Heriot Watt University campus.

About the role

The [Geomagnetism Team](#) undertakes long-term monitoring of the Earth's magnetic field through the operation of magnetic observatories in the UK and overseas. We use worldwide land, marine, airborne and satellite data to make global models describing how the Earth's magnetic field changes in space and time and what that reveals about physical processes within the solid Earth.

You will be leading the design, test, diagnostic, fabrication, and deployment of digital and analogue systems in support of the Natural Environment Research Council's (NERC) UK and overseas geomagnetic observatory network. You will also be required to provide support to other engineers in the Geomagnetism in developing new instrumentation, software applications and infrastructure and will be prepared to provide general engineering support in the field. In cooperation with other engineering staff and after a period of training, you will be part of a small team tasked with monitoring the quality and performance of real-time data from the observatory network and be prepared to react to system failures. In addition, you

will assist geomagnetic engineering staff with measurements as part of the annual UK magnetic survey programme.

The primary tasks of this role will be to:

- Ensure the quality and data delivery standards of the BGS geomagnetic observatory network are met through performance monitoring, calibration and quality assurance documentation as part of the Geomagnetism Team engineering unit.
- Meet the future data and service requirements of the Geomagnetism Team through a programme of development in areas including digital and analogue electronic design, testing, fabrication and deployment as well providing support to the instrumentation, telemetry, infrastructure, IT, and software engineering activities of the Team.
- Manage and operate the Geomagnetism Team electronics laboratory, including maintaining UKAS-traceable calibration standards for test equipment.
- Support the observatory network through planning and executing service and staff training visits to UK and overseas stations as well as managing the logistics of station maintenance and upgrades.
- Manage wider project-related tasks within the engineering unit including resource planning, procurement, budgeting, risk assessments and delivering outputs including written reports.

You will also be expected to:

- Establish and maintain collaborative relationships with external partners in the commercial and academic sectors of the geomagnetic community, representing the work of others in the Geomagnetism Team.
- Publish and present outputs to internal and external audiences ranging from general public to customer groups and international conferences.

About you

You should have a Honours Degree/Diploma or equivalent in electronic engineering or related discipline with relevant work experience. You will have a good knowledge of current electronic engineering design methodologies, preferably as applied in areas such as instrumentation, real-time monitoring or similar, plus a broad knowledge of engineering systems in areas such as instrumentation, electronics, electrical systems, communications and IT. You should have a thorough understanding of digital data acquisition theory, analogue circuit theory and filter design, and have working knowledge of at least one scientific and/or engineering computing language. Being willing and able to learn new scientific theories and engineering skills will be an important part of being successful in this role.

You must be able to communicate engineering problems and concepts to other engineers and show examples of technical problem solving ability. Whilst being able to work on your own and show initiative, you must also be comfortable in a team and be a strong communicator, both verbally and in writing. The post involves fieldwork in the UK and overseas so you must hold a valid driving licence and passport, be confident to be able to travel and work alone in remote environments, be competent in rough terrain and be personally resilient in fieldwork conditions.

Please also refer to the specific essential and desirable skills criteria for this post. To be considered for a salary at the higher end of the advertised range, you will need to demonstrate a significant amount of the desirable criteria listed.

What we offer

A generous benefits package is also offered, including a very competitive pension scheme, 30 days annual leave plus bank holidays, free parking and access to flexi-time.

We also offer the 'Bike to Work' scheme, free parking, health and wellbeing support, social clubs and on-site sports facilities.

Please note that any internal BGS staff applying for this post would, if successful, be appointed to new UKRI Terms and Conditions and pay.

How to Apply

Applicants are required to include a cover letter outlining their suitability for this role. We would stress the importance of this paperwork in our selection process. **A well thought through application addressing the advertised essential and desirable criteria for the post will be considered far more favourably than a generic covering letter and CV.**

Applications are being handled by UK Shared Business Services, to apply please visit our job board at https://www.topcareer.jobs/Vacancy/irc252030_10222.aspx

Applicants who are unable to apply online should contact us by telephone on +44 (0)1793 867000.

Closing date for receipt of applications is 10 January 2020. Interviews will take place in late January 2020 in Edinburgh.

BGS provides a range of flexible working options including flexible working patterns, compressed hours and home working so if you have a need for flexibility, please raise this in the recruitment process when your needs, balanced with the requirements of the role, will be fully considered.

We are committed to promoting equality and diversity across our organisation as well as across all areas of our science community. As such, we aim to have a workforce with employees from all backgrounds with people who are passionate about earth science and who share our commitment to work for the good of the environment and the benefit of society.

We will actively seek to avoid discrimination on the grounds of age, disability, race (including colour, nationality, ethnic or national origin), sex or sexual orientation, being trans or a member of the non-binary community, being married or in a civil partnership, being pregnant or on maternity leave, disability, race (including colour, nationality, ethnic or national origin), religion, sex or sexual orientation.

The British Geological Survey is an Investors in People organisation and has achieved Bronze status for Athena SWAN – a scheme that recognises an organisation's commitment and progress in developing a diverse and inclusive workforce.



Specific Skills Criteria		
	<i>Essential</i>	<i>Desirable</i>
QUALIFICATIONS	<ul style="list-style-type: none"> • Degree or equivalent in electronic engineering or related discipline • Full UK driving licence • UK or international passport 	
EXPERIENCE	<ul style="list-style-type: none"> • Experience in design, test and diagnostics of digital and analogue circuits to board-level, preferably as part of a monitoring system, especially if related to real-time data acquisition and telemetry • Relevant research and/or work experience, preferably in managing projects, systems and/or facilities and demonstrable evidence of a practical, technical problem solving ability • Evidence of delivering multi-disciplinary, resource-dependent outputs to time, budget and quality specifications • Experience in effectively managing own time and workload including multiple simultaneous tasks and in working within a mixed team of engineering and non-engineering staff 	<ul style="list-style-type: none"> • Experience in developing applications based on common microprocessors or microcontrollers • Experience in managing or contributing to quality control processes • Experience in writing health & safety risk assessments, systems of work and/or work instructions • Experience in procuring goods and/or services
KNOWLEDGE	<ul style="list-style-type: none"> • Knowledge of current electronic engineering design methodologies, preferably as applied in areas such as instrumentation, real-time monitoring or similar • Experience and/or thorough understanding of digital data acquisition theory, analogue circuit theory and filter design • Demonstrable working knowledge in at least one scientific or engineering computing language (e.g. C, Java, Python, R-Project, MatLab) 	<ul style="list-style-type: none"> • Knowledge of Earth Science • Knowledge of version control systems in managing software development • Experience in the UNIX (Linux or Solaris) operating system, at user level or, more usefully, including basic systems administration

		<ul style="list-style-type: none"> • Familiarity with TCP/IP network hardware and architecture
SKILLS AND ABILITIES	<ul style="list-style-type: none"> • Prepared to learn a variety of technical skills immediately on appointment and continue to develop skills and knowledge in areas of engineering other than their specialism • Good verbal, written and presentational skills and an ability to communicate science and engineering problems and concepts to both specialists and non-specialists • Understanding of basic mathematical concepts, including vectors and trigonometry and an ability to manipulate vector time series using office software and/or mathematical processing applications • Fluent in written and spoken English 	
PERSONAL QUALITIES	<ul style="list-style-type: none"> • Must be willing to travel and work alone in remote environments and be competent in rough terrain and personally resilient in fieldwork conditions 	<ul style="list-style-type: none"> • Experience in formally or informally leading or managing others • Experience in providing either formal or informal training to others
MOTIVATION	<ul style="list-style-type: none"> • Demonstrates an interest in the work of BGS, NERC and UKRI • Displays an enthusiasm for their science and a desire to develop this further 	<ul style="list-style-type: none"> • Demonstrates an interest in their own Continuing Professional Development • Demonstrates curiosity and a drive to resolve engineering problems

