UNIVERSITY OF WARWICK

Job Description

Job title	Senior Research Technician
Department	School of Life Sciences
Grade	FA5

Job purpose (a brief summary of the role)	The Senior Research Technician will serve as Warwick's **analytical expert** for the NOISE project, taking primary responsibility for the operation, maintenance, calibration, and optimisation of a suite of sophisticated analytical instruments used for measuring soil nitrogen emissions, greenhouse gases, and related biogeochemical parameters. You will be the technical lead for both laboratory analyses and field deployments, ensuring data quality, instrument performance, and adherence to analytical protocols. This role requires a high degree of technical expertise, independence, and the ability to troubleshoot complex analytical systems while supporting the wider research team.
Duties and responsibilities	**Analytical Instrumentation (50%)** • Operate, maintain, and calibrate mass spectrometers, greenhouse gas analysers, FTIR spectrometers, and other analytical instruments for measuring NOx, N_2O, NH_3, CO_2, and related compounds. • Perform routine and preventative maintenance on analytical equipment, keeping detailed maintenance logs. • Troubleshoot instrument problems, liaising with manufacturers and service engineers as needed. • Optimise analytical methods and validate instrument performance through quality control procedures. • Manage gas standards, calibration materials, and chemical reagents. • Ensure all equipment operates within specifications and meets data quality requirements. • Train research staff and students in proper instrument operation and best practices. **Field Operations and Experimental Support (30%)** • Set up, deploy, and operate automated dynamic soil chambers and associated gas sampling equipment at field sites (primarily at Warwick's Stratford Innovation Campus). • Coordinate field measurement campaigns across multiple plots and treatments throughout the growing season. • Collect and process soil samples for ex situ analyses. • Monitor environmental parameters (soil moisture, temperature, oxygen concentration) using multi-depth sensor arrays. • Perform field-based calibrations and quality assurance checks. • Ensure adherence to health and safety protocols during field operations. • Coordinate logistics for equipment transport between laboratory and field sites. **Data Management and Quality Assurance (15%)** • Implement and maintain data quality control procedures for all analytical measurements. • Process raw data files, perform calibrations, and generate final datasets.

	• Maintain organized data archives and metadata documentation. • Identify and flag data quality issues, implementing corrective actions. • Contribute to the development of standard operating procedures (SOPs) for analytical methods. • Ensure compliance with NERC data management requirements. **Laboratory Management and Safety (5%)** • Maintain laboratory chemical inventory and ordering systems. • Ensure compliance with COSHH, biological safety, and other relevant regulations. • Conduct risk assessments for laboratory and field activities. • Support laboratory safety inspections and equipment certifications. • Maintain clean and organised laboratory spaces.

Person Specification *The Person Specification focuses on the essential and desirable knowledge, skills, experience and qualifications required to undertake the role effectively. This is measured by (a) Application Form, (b) Test/Exercise, (c) Interview, (d) Presentation.*		
Essential Criterion No.	Essential Criterion Description	Measured by
E1	Vocational Qualification at NVQ Level 4, or HNC/HND or education to ‘A’ level standard or equivalent in Mathematics and/or a relevant science subject, or relevant experience at a high level in a similar work environment.	A & C
E2	Proven ability to calibrate analytical instruments and implement quality control procedures.	A & C
E3	Extensive hands-on experience operating and maintaining analytical instruments, particularly, mass spectrometers (e.g., IRMS, GC-MS, or similar), spectroscopic gas analysers (e.g., FTIR, cavity ring-down spectroscopy, laser-based systems), and automated gas analysis systems.	A & C
E4	Have experience of planning and undertaking of experiments, including assessing the conditions needed and using appropriate techniques.	A & C
E5	Experience with troubleshooting complex analytical systems and solving technical problems independently	A & C
E6	Strong organisational skills and attention to detail in data management and record-keeping.	A & C
E7	Ability to work independently with minimal supervision and take initiative.	A & C
E8	Excellent communication skills, both written and verbal.	A & C
E9	Ability to work collaboratively as part of an interdisciplinary team, and willingness to take instruction from team leaders.	A & C
E10	Willingness to conduct fieldwork in outdoor agricultural settings in various weather conditions.	A & C
E11	Full UK driving license (for travel to field sites).	A & C

Desirable Criterion No.	Desirable Criterion Description	*Measured by*
D1	A degree or professional/recognised qualification in a related subject area.	A & C
D2	Familiarity with isotope ratio mass spectrometry (IRMS) or isotope analysis techniques.	A & C
D3	Experience with soil or environmental sampling and analysis with knowledge of soil biogeochemistry or nitrogen cycling.	A & C
D4	Molecular biology laboratory skills (DNA/RNA extraction, qPCR).	A & C
D5	Previous work in environmental monitoring, agricultural research, or atmospheric science, including experience coordinating field campaigns or experimental studies resulting in a track record of contributions to peer-reviewed publications or conference presentations.	A & C