University of Reading

# JOB DESCRIPTION

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| **Vacancy reference:** | SRF41873 |
| **Post Title:** | Senior Technician (Analytical Chemistry) |
| **Grade:** | Grade 5 (1,0 FTE). Four year fixed term position |
| **School/Department:** | SAGES |
| **Reports to:** | Dr. Peter Bray (Department of Archaeology) |
| **Responsible for:** | None |

## Purpose

The principal duty of the post holder will be to undertake a range of technical duties within the Ancient Materials laboratory at the University of Reading. This will largely focus on the analysis of ancient metals, using Microwave Plasma – Atomic Emission Spectrometry (MP-AES), with some X-ray fluorescence (XRF). Duties includes the preparation of metal samples for analysis using acid digestions, the preparation of analytical standards, machine operation, lab maintenance, and data quality tests. The post holder will be the main technician attached to a major new research project led by Dr. Peter Bray (a UKRI Future Leader Fellowship), and will be involved in the wider archaeological and scientific discussions. The post holder must have experience of working in laboratories and experience of ICP or related analytical techniques.

## Main duties and responsibilities

Research

- To assist the Ancient Materials research group in obtaining, analysing and interpreting chemical analysis data.
- To be responsible for the acid digestion of metal samples and the preparation of analytical standards.
- To support the operation of a Microwave Plasma -Atomic Emission Spectrometer.
- To undertake other laboratory-based techniques including (but not limited to): XRF analysis, pXRF analysis, in collaboration with PI, Dr. Peter Bray.
- To support data quality assurance monitoring.
- To assist post-doctoral researchers, doctoral students and the wider team, when required,

Laboratory Maintenance and environment

- To be responsible for ensuring the general maintenance of equipment and laboratories and for maintaining a safe working environment.
- To clarify complex issues in writing and/or verbally, including the results of laboratory work.
- Monitoring and maintaining records to meet School requirements (e.g. Health and Safety), data recording, waste management, stock keeping and ordering, and work schedules for activities within each work area.
- To attend relevant meetings.
- To provide technical advice to staff and students based upon an in-depth knowledge and experience.
- To provide advice to staff and students in the preparation of laboratory-based Risk Assessment and to prepare Standard Operating Procedures for use with allocated analytical instrumentation.

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- To advise and assist staff and students on the design, implementation and management of laboratory activities.
- To contribute to organising process changes by applying specialist knowledge and experience and the development of techniques and approaches.
- To apply technical, specialist knowledge to solve more complex, non-routine problems.
- To be responsible for carrying out equipment maintenance and to diagnose faults with equipment and procedures.

**Supervision received**

Day-to-day supervision and support will be provided by the research group PI, Dr. Peter Bray. The post-holder will be part of a diverse team of archaeologists and data scientists, who will also be expected to support the successful applicant. The post-holder will have access to the wider support of the School's technician team, for example monthly staff meetings.

**Supervision given**

The post-holder will be expected to support the work of the research group through their experience, but will not be responsible for supervising staff members.

**Contact**

The post-holder will have frequent contact with the research group leader, Dr. Peter Bray, as well as other technicians within SAGES.

**Terms and conditions**

This is a four year fixed term post at 1.0 FTE (full-time).

This document outlines the duties required for the time being of the post to indicate the level of responsibility. It is not a comprehensive or exhaustive list and the line manager may vary duties from time to time which do not change the general character of the job or the level of responsibility entailed.

**Date assessed:**

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# PERSON SPECIFICATION

| Job Title | School/Department |
|---|---|
| Senior Technician (Analytical Chemistry) | **SAGES** |

| Criteria | Essential | Desirable |
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| **Skills Required** | • Experience in operating MP-AES, ICP-OES or ICP-MS instruments, or similar methods<br>• Able to produce accurate records and reports<br>• Able to receive and respond to enquiries, escalating requests, where appropriate<br>• Able to plan and organise resources to time and quality standards over short and longer term timescales<br>• Able to disseminate information to staff and students<br>• Interpret request requirements providing intelligible specialist guidance to staff, students on complex scientific supply / equipment requests<br>• Able to clarity complex issues in writing and / or verbally<br>• Proven IT skills | • Able to operate, troubleshoot and develop methods for a range of analytical equipment (e.g., pXRF, SEM-WDS) |
| **Attainment** | • Skill level equivalent to achievement of HND/HNC/ Degree, NVQ4 or recognised apprenticeship in a relevant subject area; and have relevant post qualification work experience in a technical role | |
| **Knowledge** | • An awareness of principles and trends in laboratory practice<br>• Apply technical, specialist knowledge to solve complex, non-routine problems | • Sufficient knowledge to identify problems, generate original ideas and solutions and advise on the development and application of laboratory processes. |

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| | • Able to organise short or medium term developments or process changes in own work area by applying specialist knowledge and experience | |
| **Relevant Experience** | • Experience of ICP-OES, ICP-MS, or MP-AES analysis<br>• Extensive technical work experience acquired in relevant roles and job related training<br>• Sufficient experience to be able to advise and assist in areas such as acid digestion of metal samples, preparation of analytical standards, general laboratory maintenance<br>• Able to develop understanding of long-standing and complex problems and to apply professional knowledge and experience to solve them.<br>• Experience of planning and progressing work activities within broad professional guidelines and / or organisational policy | • Experience of chemical analysis of inorganic materials (please note archaeological experience is not necessary)<br>• Experience of training new members of laboratories |
| **Disposition** | • Motivation to undertake appropriate specialist training commensurate with the role to further professional development.<br>• Commitment to the values and professional behaviours of the University<br>• Desire to work as part of a team to learn new skills and research approaches. | |

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| Completed by: Dr. Peter Bray | Date: 15th July 2022 |