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Planning

## **Multi collector Inductively Coupled Plasma Spectrometer MC-ICP MS**

University of Portsmouth

UK2: Preliminary market engagement notice - Procurement Act 2023 - [view information about notice types](#)

Notice identifier: 2025/S 000-078445

Procurement identifier (OCID): ocds-h6vhtk-05ebd3

Published 1 December 2025, 12:06pm

### **Changes to notice**

This notice has been edited. The [previous version](#) is still available.

edited to include detailed specification

### **Scope**

### **Reference**

25SJM343

## Description

The requirement is for a dual beam path MC\_ICPMS Thermal Coupled Mass Spectrometer, The instrument will be used for high precision isotopic analysis of Hf, U-Pb, U series, Sr, Pb and Nd in geological samples. The system must support both dry plasma and laser ablation sample introduction methods. The system will be primarily used for geological and materials applications and will be coupled to our existing 193nm and femto-second laser systems.

The instrument must feature:

- A dual beam path allowing bypass of the collision cell when not required.
- Daly detectors for wide dynamic range in mixed isotope systems.
- Upgrade pathway for Fast ion counters for single-shot analysis when available.
- 36 month manufacturer warranty included.

Detailed Specification:

### 1. General Requirements

- The instrument must be a high-precision Multi-Collector Inductively Coupled Plasma Mass Spectrometer (MC-ICP-MS) designed for isotopic analysis of geological materials.
- Capable of precise and accurate measurement of U-Pb-Th, Hf, K-Ca, and S isotopic systems in mineral and rock samples.
- Must support both wet & dry plasma and laser ablation sample introduction methods.
- Vacuum pumps must be oil free dry pumps.

### 2. Performance Specifications

- Mass Resolution: Low, medium, and high-resolution modes ( $>10,000$  resolving power pseudo-high res and  $>3000$  true high res @ 10% valley).
- Sensitivity:  $>1000$  V/ppm for U and Pb in dry plasma mode;  $>600$  V/ppm for Nd and Hf in dry plasma mode at 100 $\mu$ l/min uptake rate.

- Precision and Accuracy: Internal precision better than 20 ppm (2?) for  $^{143}\text{Nd}/^{144}\text{Nd}$  and  $^{176}\text{Hf}/^{177}\text{Hf}$ ; External reproducibility better than 50 ppm (2?).
- Must support operation with gases such as  $\text{H}_2$ ,  $\text{He}$ , or  $\text{NH}_3$  (MFCs for each to be included).

### 3. Collector Configuration

- Minimum of 9 Faraday collectors with software-switchable pre-amplifiers ( $10^{11}/10^{12}$  options for each amplifier).
- At least 3 ion counters, for high-sensitivity detection of low-abundance isotopes (e.g.,  $^{204}\text{Pb}$ ,  $^{235}\text{U}$ ).
- Detectors must allow simultaneous collection of all relevant isotopes of U-Pb-Th, Hf, K-Ca, and S systems.
- Dynamic range:  $>10^5$ .
- 3 Daly detectors (to replace standard Ion Counters) for enhanced dynamic range.
- Collision/reaction cell for interference removal (e.g., oxide and hydride interferences).

### 4. Sample Introduction System

- Dry plasma introduction system with a desolvating nebulizer (e.g., Aridus or equivalent).
- Compatibility with laser ablation systems for in situ analysis of mineral phases (specifically ASI Resolution and ASI J200 Tandem).
- Standard nebulizer and spray chamber for routine solution-based work.

### 5. Software and Data Handling

- Software must support real-time data acquisition and display.
- Isotope ratio calculations with correction for mass bias, blank, and interference.
- Export formats compatible with common geochemical software (e.g., Iolite, Isoplot, Excel).

### 6. Installation and Support

- Full installation, calibration, and on-site training must be provided.

- Minimum 24 month warranty (36 month preferred) with options for extended service contracts.
- Remote diagnostics and software updates should be available.

## 7. Compliance and Documentation

- Must comply with relevant ISO and safety standards.
- Full documentation including user manuals, maintenance guides, and performance certificates must be provided.

## 8. Desirable

- Extended warranty beyond 24 months.
- Service support contract costings as options.

Budget: £450,000.00 to £500,000.00 (ex. VAT). Offers for ex-demonstration or refurbished equipment are welcome however these will be considered from manufacturers only, not customers or third party resellers.

## **Total value (estimated)**

- £450,000 excluding VAT
- £540,000 including VAT

Above the relevant threshold

## **Contract dates (estimated)**

- 6 January 2026 to 5 February 2029
- 3 years, 1 month

## **Main procurement category**

Goods

### **CPV classifications**

- 38000000 - Laboratory, optical and precision equipments (excl. glasses)

### **Contract locations**

- UKJ31 - Portsmouth

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## **Engagement**

### **Engagement deadline**

14 December 2025

### **Engagement process description**

Please send information outlining how you meet the requirements to [ruth.powell@port.ac.uk](mailto:ruth.powell@port.ac.uk). This should include technical specifications, delivery arrangements and lead times, service and warranty information. Any queries can also be directed to the same contact.

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## **Participation**

### **Particular suitability**

Small and medium-sized enterprises (SME)

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## Submission

### Publication date of tender notice (estimated)

5 January 2026

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## Contracting authority

### University of Portsmouth

- Public Procurement Organisation Number: PWYV-2655-NPMQ

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Region: UKJ31 - Portsmouth

Organisation type: Public authority - sub-central government