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Not applicable

# Tender for the Supply and Installation of a Cryomagnetic System for NMR Applications

THE UNIVERSITY OF BIRMINGHAM

F14: Notice for changes or additional information
Notice identifier: 2024/S 000-036843
Procurement identifier (OCID): ocds-h6vhtk-04b3cc
Published 14 November 2024, 12:32pm

## Section I: Contracting authority/entity

### I.1) Name and addresses

THE UNIVERSITY OF BIRMINGHAM

Edgbaston

BIRMINGHAM

B152TT

**Contact**

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United Kingdom

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UKG31 - Birmingham

**UK Register of Learning Providers (UKPRN number)**

10006840

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Main address

www.bham.ac.uk

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# Section II: Object

## II.1) Scope of the procurement

### II.1.1) Title

Tender for the Supply and Installation of a Cryomagnetic System for NMR Applications

Reference number

SC13190-24

### II.1.2) Main CPV code

- 38340000 - Instruments for measuring quantities

### II.1.3) Type of contract

Supplies

### II.1.4) Short description

The University of Birmingham invites tenders for supply and installation of a cryomagnetic system that is suitable for NMR experiments. The cryomagnetic system will form part of the Ultra-Low-Temperature NMR, i.e. facilities created with the support of an EPSRC Strategic Infrastructure award. It will be used to facilitate/support fundamental and applied science research using NMR by researchers from chemistry, physics and materials science across the UK. In this context, the system will be used to provide a wide range of sample environment including RF access to the samples at very low temperature as well as in a strong, homogenous and stable magnetic field. Therefore, it will be required as part of the project to supply modular probes that are readily modified to suit the purposes of different requirements for the sample environment. The broad user base and diverse

range of materials to be characterised with the equipment means that the equipment interface should be user friendly and reliable.

The cryomagnetic system should provide a sample environment on a single platform, especially being capable of sweeping the magnetic field and temperature simultaneously and continuously. It should consist of a 'Superconducting Magnet' with a maximum field strength of 16 T or higher and two cryostats that collectively provide a sample temperature range between 20 mK and 300 K or wider. Each of the cryostats should operate in a different temperature range with some overlap, e.g., i) Variable Temperature Insert (VTI) operates at temperatures between 1.5 K and 300 K or wider and ii) Dilution Refrigerator (DR) operates for temperatures between 20 mK and 2 K or wider. Specifically, the parts of the cryomagnetic system should further satisfy the following requirements:

• Spatial field homogeneity around the maximum field position better than 10 ppm over 1cm3 diameter sphere volume (DSV).

• Temporal field stability around the maximum field position better than 10 ppm / hour.

• Maximum field ramp rate should be 1 T/min or faster.

• Liquid helium consumption when fitted with VTI should be less than 400 cc / hour under static conditions with a magnet in a persistent mode.

• Accessible sample space when using VTI should be 30 mm in diameter or larger.

• The sample space for VTI should be filled with helium gas when in operation.

• Accessible sample space when using DR should be 30 mm in diameter or larger.

• The sample space for DR should be filled with liquid helium mixture when in operation.

The cryostat options as well as probe options should be easily exchangeable and integrated with the magnet, with the entire system having a single PC-based controller capable of executing automated system setting and data collection. The instrument should connect directly with the University of Birmingham's helium liquefier system. It should be delivered, installed, and tested on site with a maintenance and service package, with provision of on-site training.

## Section VI. Complementary information

### VI.6) Original notice reference

Notice number: 2024/S 000-035686

## Section VII. Changes

### VII.1.2) Text to be corrected in the original notice

Section number

IV.2.7

Instead of

Date

4 December 2024

Local time

3:00pm

Read

Date

9 December 2024

Local time

3:00pm