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Tender

## **Supply and Installation of a PEM Electrolyser Test System**

UNIVERSITY OF BIRMINGHAM

F02: Contract notice

Notice identifier: 2021/S 000-032008

Procurement identifier (OCID): ocds-h6vhtk-03047f

Published 22 December 2021, 9:53am

### **Section I: Contracting authority**

#### **I.1) Name and addresses**

UNIVERSITY OF BIRMINGHAM

Chancellors Close

BIRMINGHAM

B152TT

#### **Contact**

Susanna Ting

#### **Email**

[s.y.ting@bham.ac.uk](mailto:s.y.ting@bham.ac.uk)

#### **Country**

United Kingdom

#### **NUTS code**

UKG31 - Birmingham

**Internet address(es)**

Main address

[www.birmingham.ac.uk/index.aspx](http://www.birmingham.ac.uk/index.aspx)

**I.3) Communication**

The procurement documents are available for unrestricted and full direct access, free of charge, at

[www.in-tendhost.com/universityofbirmingham](http://www.in-tendhost.com/universityofbirmingham)

Additional information can be obtained from the above-mentioned address

Tenders or requests to participate must be submitted electronically via

[www.in-tendhost.com/universityofbirmingham](http://www.in-tendhost.com/universityofbirmingham)

**I.4) Type of the contracting authority**

Body governed by public law

**I.5) Main activity**

Education

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## **Section II: Object**

### **II.1) Scope of the procurement**

#### **II.1.1) Title**

Supply and Installation of a PEM Electrolyser Test System

Reference number

SC9847/21

#### **II.1.2) Main CPV code**

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

#### **II.1.3) Type of contract**

Supplies

#### **II.1.4) Short description**

The University of Birmingham invites tenders for supply of a PEM electrolyser test system. The system will be used to test membrane electrode assemblies with an active area up to 50 cm<sup>2</sup> to optimise their fabrication process based on a granted project. A

cathode operating pressure of 3.5 MPa or higher is required with the maximum current no less than 125 A.

The test system also needs to be able to conduct both

electrochemical impedance spectroscopy and cyclic voltammetry analysis, as well as including a H<sub>2</sub> concentration

sensor at the air side to monitor the hydrogen penetration rate and safety. Also, this system should incorporate a water supply system, and the PC with the control software for conducting the required operation.

This project may be funded by the European Regional Development Fund (ERDF) or

European Structural and Investment Fund (ESIF) or

Research Councils UK (RCUK), the strategic partnership of the UK's seven Research Councils.

### **II.1.5) Estimated total value**

Value excluding VAT: £326,429

### **II.1.6) Information about lots**

This contract is divided into lots: No

## **II.2) Description**

### **II.2.3) Place of performance**

NUTS codes

- UKG - West Midlands (England)

### **II.2.4) Description of the procurement**

The University of Birmingham invites tenders for supply of a PEM electrolyser test system.

The system will be used to test membrane electrode assemblies to optimise their fabrication process based on a granted project. The specification requirements are as below

Specification

i. PEM test station including

Electronic power supply for the electrolyser with a voltage range of 5 V or higher, and current of 125 A or higher.

Automatic back pressure control module, up to 35 bar or higher.

Fully automated and unattended operation.

2 separate electrolyte loops with circulation pumps for the anode and cathode with a temperature range up to 80o C or higher.

Gas/liquid separation.

Real PLC for safe test stand operation.

Continuous data acquisition (flight recorder).

Control PC with the operating software.

PID loops for cell end plate heaters with temperature sensor.

H<sub>2</sub> concentration sensor at the air side with a measurement range of 0 - 5 Vol%

H<sub>2</sub> in O<sub>2</sub>.

iii. Integrated DI-water supply system from storage tank.

iv. Impedance analyzer with a frequency range of 1 mHz to 15 kHz or larger, an excitation current of  $\pm 10$ -30A or higher, and DC Voltage input of 10-20 V or higher.

v. Cyclic voltammetry add-on with additional H<sub>2</sub> input line with MFC on cathode side.

vi. Electrolyser Cell Hardware of 25 or 50 cm<sup>2</sup>

for operating pressure up to 35 bar

or higher.

vii. Optional component technologies

1 External DI-water supply system.

2 Flow meter for anode or cathode electrolyte recirculation circuit.

3 Hydrogen and oxygen flow measurement.

4 O<sub>2</sub> concentration sensor in hydrogen side.

#### **II.2.5) Award criteria**

Quality criterion - Name: Compliance to the Specifications / Weighting: 40

Quality criterion - Name: After Sales and Technical back up / Weighting: 10

Quality criterion - Name: Delivery and Training / Weighting: 10

Quality criterion - Name: Sustainability and Environmental / Weighting: 5

Quality criterion - Name: Standard Supplier Questionnaire (SQ) / Weighting: 10

Price - Weighting: 25

**II.2.6) Estimated value**

Value excluding VAT: £326,429

**II.2.7) Duration of the contract, framework agreement or dynamic purchasing system**

Start date

28 February 2022

End date

31 January 2023

This contract is subject to renewal

No

**II.2.10) Information about variants**

Variants will be accepted: No

**II.2.11) Information about options**

Options: No

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## **Section IV. Procedure**

### **IV.1) Description**

#### **IV.1.1) Type of procedure**

Open procedure

#### **IV.1.8) Information about the Government Procurement Agreement (GPA)**

The procurement is covered by the Government Procurement Agreement: Yes

### **IV.2) Administrative information**

#### **IV.2.2) Time limit for receipt of tenders or requests to participate**

Date

26 January 2022

Local time

12:00pm

#### **IV.2.4) Languages in which tenders or requests to participate may be submitted**

English

#### **IV.2.7) Conditions for opening of tenders**

Date

2 February 2022

Local time

12:00pm

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## **Section VI. Complementary information**

### **VI.1) Information about recurrence**

This is a recurrent procurement: No

### **VI.4) Procedures for review**

#### **VI.4.1) Review body**

The University of Birmingham

Edgbaston

B15 2TT

Email

[S.Y.TING@BHAM.AC.UK](mailto:S.Y.TING@BHAM.AC.UK)

Country

United Kingdom