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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

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Country

United Kingdom

NUTS code

UKG31 - Birmingham

Internet address(es)

Main address

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

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

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Education

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 cm² 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 H₂ 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.

H₂ concentration sensor at the air side with a measurement range of 0 - 5 Vol%

H₂ in O₂.

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 ± 10 -30A or higher, and DC Voltage input of 10-20 V or higher.

v. Cyclic voltammetry add-on with additional H₂ input line with MFC on cathode side.

vi. Electrolyser Cell Hardware of 25 or 50 cm²

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 O₂ 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

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

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

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Country

United Kingdom