

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

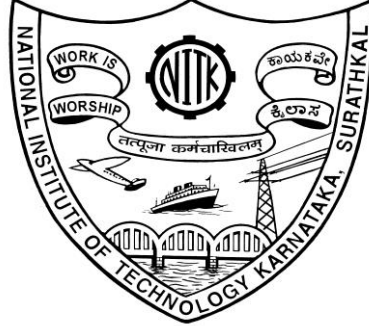
(Established Under NIT Act ,Govt.of India)

DEPARTMENT OF CHEMICAL ENGINEERING

POST SRINIVASNAGAR, MANGALORE – 575 025 (D K)

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OPEN TENDER DOCUMENT

Tender Notification . No : NITK/CHE/IMPRINT/2019-2020/Butten cell Test Station /736 Date: 27.08.2019

Name of Goods : SO Button Cell Test Station with EIS and Furnace

Estimated amount put to Tender.Rs. : 5000000.00

E M D Amount. Rs. : 100000.00

Time for Supply of item
after release of Purchase order : 30 Days

Last Date for submission of tender : 20.09.2019 Before 3.00 pm

Address for Submission of Tende : Dr. Hari Mahalingam
Head of Department,
Dept. of Chemical Engg.,
NITK, Surathkal,
P.O. Srinivasnagar -575 025.

Date of opening of technical bid : 20.09.2019 3.30pm (if possible)



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NOTICE INVITING TENDER (NIT)

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an autonomous body under Ministry of HRD Govt of India , a Deemed University , imparting Technical Education and engaged in Research Activities. It is proposed to procure the items for the departmental academic/research activities.

Sealed Tenders are invited for the following items in **two cover system** (i.e., Technical bid and financial bid) subject to the following terms and conditions, from the reputed manufacturers or its authorised dealers so as to reach this office on or before scheduled date and time. The tender (Technical bid) will be opened on the same day if possible in the presence of bidders or their authorized agents who may choose to be present. The financial bid of only such bidders whose technical bid is accepted shall be opened on the same day or later pre-informed date.

1. Name of Goods : SO Button Cell Test Station with EIS and Furnace
2. Estimated Cost :Rs : 5000000.00
3. E M D Rs : 100000.00
4. Time for completion of Supply after Placing Purchase Order : 30 Days
5. Last date at time for submission of Tender : 20.09.2019 Before 3.00 pm
6. Tender to be submitted at the following address : Dr. Hari Mahalingam
Head of Department,
Dept. of Chemical Engg.,
NITK, Surathkal,
P.O. Srinivasnagar -575 025.
7. Place, Date and Time of opening of of technical bid : 20.09.2019 3.30pm (if possible)
8. VENUE : Board Room

Note : Institute shall not be responsible for any postal delay about non-receipt / non delivery of the bids or due to wrong addressee

[Signature of HOD With Seal]

**HEAD OF THE DEPARTMENT
CHEMICAL ENGINEERING**

National Institute of Technology Karnataka, Surathkal
P. O. Srinivasnagar - 575 025, D.K., Mangalore

1. The bid should be submitted in two cover system- Technical Bid and Financial Bid:

1.1 Envelope No.1 – Technical Bid: The agencies should give details of their technical soundness and provide list of customers of previous supply of similar items to Universities, Institutes or Government Departments/ Undertakings/ public sectors with contact details. The details of the agency / profile be furnished along with the copy of all related documents. This envelope should be sealed and duly as Super-scribed as “Envelope No. 1 – Technical Bid”. Full name and address of the agency should also be mentioned on envelope and should be addressed to The Director, NITK, Surathkal

1.2. Documents to be submitted in the technical bid :

- a) The agency should possess Licence certificate for manufacture /supply of the item.
- b) List of Owner/partners of the firm and their contact num
- c) The agency should possess Income tax PAN number.
- d) The agency should possess VAT registration and TIN number.
- e) Catalogue of the Product with detailed product specifications.
- f) List Service Centres
- g) List of customers with contact details.
- h) The average annual turnover should not be less than 30% of the estimated cost put to tender for the job work. The copy of the Balance sheet, Profit & Loss A/c., Trade or Manufacturing A/c for the last 3 years should be enclosed
- i) Warranty Period Offered for the tendered item to be specified. If the Warranty period is not conforming with the schedule of requirements given in section 3 of the document, the bid is liable to be treated as non-responsive and rejected.
- j) EMD in original form valid for minimum six months, through DD / Bank Guarantee only drawn on any scheduled bank in favour of “ Director NITK, Surathkal”, payable at Surathkal should be submitted. EMD shall bear no interest. Any bid not accompanying with EMD is liable to be treated as non- responsive and rejected.
- k) Contract form given in section 5 need to be submitted.

The above documents should be furnished in the technical bid envelope.

Envelope No.2 – Financial bid : The agencies should submit their financial bid as per the format given in Section 4 of the Notice Inviting Tender in this cover. The rate should be quoted both in words and figures. All the pages of the financial bid should be signed affixing the seal. All corrections and overwriting should be initialled. This envelope should be duly superscribed as “Envelope No. 2 – **Financial bid**”. Full name and address of the agency should also be mentioned on the envelope and should be addressed to The Director, NITK, Surathkal.

Both the Envelope No.1 and 2 should be kept in another separate envelope duly superscribed with the following details.

(i) Tender Notification Number (ii) " Tender for the supply of.....", (iii) Not to Open before (Date and Time)

Mention “Kind Attention : Dr. Hari Mahalingam 0824-2474000 Extn 3042 and Head of Department of Chemical Engg.

Submit at the address given in the Inviting Tender

- 3 The tender will be acceptable only from the manufacturers or its authorised supplier.
4. The Institute reserves the right to visit to the factory before or after issue of supply order to satisfy itself regarding quality of production . In case of any remarks /default noted, the EMD will be forfeited even if pre-qualified.
- 5.The Financial bid shall be in the format of Price Schedule given in Section 4. The Contract form as per format given in section 5 shall be submitted. Incomplete or conditional tender will be rejected
6. Details of item to be carried out, approximate quantity and the specifications are mentioned in Section 3 ” appended to this Notice Inviting Tender.

7. The item to be used is strictly according to the specification and subject to test by the institute / concerned authorities. It must be delivered and installed in good working condition.
8. The Institute reserves the right to cancel or reduce the quantity included in the schedule of requirements at any time after acceptance of the tender with a notice. The Contractor/Supplier shall have no claim to any claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the work / supply in full but he did not derive in consequence of the foreclosure of the whole or part of the works.
9. Performance Security of 5 % of contract value in terms of Bank Guarantee by scheduled banks shall be given by the successful bidder for the total period of Warranty. Plus two months.
If the Successful bidder fails to comply supply contract with in stipulated period, the performance security shall be forfeited
10. Release of EMD :The EMD shall be released after receipt of performance security from successful bidder.
If the Successful bidder fails to furnish performance security and comply supply contract with in the stipulated period, the EMD shall be forfeited and claim for return of Emd shall be considered.
11. Validity of bids: The rate quoted should be valid for a minimum of 90 days No claim for escalation of rate will be considered after opening the Tender.
12. Imports : In case, Goods are to be Imported, the Indian agent should furnish authorisation certificate by the principles abroad for submission of the bid in response to this Notice Inviting Tender.
13. Clarification of Tender Document:
A prospective bidder requiring any clarification of the Tender Document may communicate to the contact person given in this notice inviting tender. The contact person will respond to any request for clarification for the Tender Document received not later than 5 working days prior to the last date for the receipt of bids
14. Amendment of Tender document: At any time prior to the last date for receipt of bids, Institute may or any reason, whether at its own initiative or in response to a clarification requested by prospective bidder, modify the Tender document by an amendment.
15. Institute may at its own discretion extend the last date for the receipt of bids
16. The bids shall be written in English language and any information printed in other language shall be accompanied by an English translation, in which case for the purpose of interpretation of the bid , the English translation shall govern.
17. The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids.
The decision of the Institute Purchase Committee is final in all matters of tender and purchase.
18. The bidder should give the following declaration while submitting the tender
19. Any other details required may be obtained from the contact person given in the notice inviting tender during the office hours.

DECLARATION

I / we have not tampered / modified the tender forms in any manner. In case , if the same is found to be tampered / modified, I / we understand that my / our tender will be summarily rejected and full Earnest money deposit will be forfeited and I / we am / are liable to be banned from doing business with NITK, Surathkal and / or prosecuted.

Signature of the Bidder :

Name and Designation :

Business Address :

Place :

Date :

Seal of the Bidder's Firm

SECTION :2 : CONDITIONS OF CONTRACT

- 1.The rates should be quoted for preferably FOR destination from supply within India.
2. In case of import both CIF and/ or FOB rate should be quoted . All components of expenditure to arrive at Bangalore need to be explicitly specified.
- 3.The bidder shall indicate the excise duty exemption for the goods if applicable.
- 4.The institute is eligible for customs duty exemption, excise duty exemption, issuance of form D
- 5.The rate quoted should be on unit basis. Taxes and other charges should be quoted separately, considering exemptions if any.
6. Rate quoted should be inclusive of Testing, commissioning and Installation of equipment and Training.
7. Payment: No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier. In case of Imports, the payment will be made through LC / Sight Draft / After Installation, and performance security need to be submitted at the time of LC commitment / issue of sight draft.
8. Guarantee and Warrantee period should be specified for the complete period conforming to the section of this tender document.
9. Period requirement for the supply and installation of item should be specified conforming to the section 3 of this tender document.
10. In case of dispute, the matter will be subject to Mangalore Jurisdiction only.

SECTION 3 : SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS

[To be filled up by the Department / Center of NITK, Surathkal]

Item(s) Name to be Procured	: SO Button Cell Test Station with EIS and Furnace
Type (Equipment / Software / Furniture / Others)	: PLANT, MACHINERY & EQUIPMENT
Brief Specifications of the Item(s) (Attach Additional Sheet if necessary)	: Attached
Quantity	: 1
Any other details / requirement	: The rate quoted shall be valid for six months for placing future requirement under repeat order
Warranty Period required	: 1 years
Delivery Schedule expected after release of Purchase order	: 30 Days
EMD (in Rupees) Rs	: 100000.00
Performance Security to be given by Successful Bidder after release of Purchase Order (in Rupees)	:

SECTION 4 : PRICE SCHEDULE

[To be used by the bidder for submission of the bid]

1 Item Name

Specifications

2 (Conforming to Section 3 of

Tender document- Enclose additional sheets if necessary)

3 Currency and Unit Price

4 Quantity

5 Item Cost (Sl No. 3 * Sl. No. 4)

(If item is imported then foreign currency should be quoted)

6 Taxes and Other Charges

(i) Specify the type of taxes and duties in percentages and also in figures.

(ii) Specify Other Charges in figures.

7 Warranty Period

(Conforming to the Section 3 of Tender document- This should be mentioned in technical bid also in order to get qualified for financial bid)

8 Delivery Schedule

(Conforming to the Section 3 of Tender document

9 Name and address of the Firm for placing purchase order

10 Name and address of Indian authorized agent (in case of imports only)

AMC rate for after warranty period

Signature of the Bidder :

Name and Designation :

Business Address :

Place :

Date :

Seal of the Bidder's Firm

SECTION 5 : CONTRACT FORM

[To be provided by the bidder in the business letter head]

- 1 (Name of the Supplier's Firm) hereby abide to deliver the by the delivery schedule mentioned in the section 3 tender document for supply of the items if the purchase order is awarded.

- 2 The item will be supplied conforming to the specifications stated in the tender document without any defect and deviations.

- 3 Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

Signature of the Bidder :

Name and Designation :

Business Address :

Place :

Date :

Seal of the Bidder's Firm

SPECIFICATIONS

The SOFC fuel cell test station with Serpentine flow, Straight flow / perpendicular line and it should be capable of testing fuel cells with in-situ controlled humidity, gas flow etc. The system has integrated AC Impedance measurement facility and reference electrode to perform internal cell resistance etc. Inert gas storage and purging during emergency stop and Benchtop cabinet.

Hardware Specifications:

1. Electronic Load:

Maximum Load current: 0-120A

Maximum load Power: 600 Watts

Maximum load current should be able to draw at near zero cell voltage

2. Potential Measurement:

Maximum Voltage: 0-60V

Potential Resolution: 100uV

Low Range Accuracy: 0.1% + 3mV

High Range Accuracy: 0.1% + 8mV

ZERO Volt Loading Power supply.

3. Impedance:

Integrated AC-Impedance measurement facility

4. Humidification:

Humidity bottles are made from type 316 stainless steel.

Swagelok fittings for gas inputs and outputs are welded into the bottle.

Nafion tubing is coiled in the bottle to provide dew-point humidity level for the gas passing through the tubing.

The bottle is insulated and heated using a silicone rubber flex-pad.

- Dual Bottle System for Anode and Cathode
- Output lines heated independently from bottle
- Sight glass for visual water level of bottles
- Nafion tubing to provide near dew-point humidity level for the gas passing through

5. Quick Temperature change Humidification system

Temperature range: 40-70 Deg C

- Humidity: Dew Point
- Change rate: 30 seconds for any temperature within range
- Output line heater for Anode and cathode.

6. Mass Flow Controller:

Digital Mass Flow Controller Sys.; Anode (1000 sccm) & Cathode (5000sccm) w/flow-tracking

7. Crofer Cell:

Compression Crofer button cell 25 mm with serpentine flow pattern including inks and Mica gaskets

8. Button Cells:

Button Cells 10 nos should be supplied with the system

9. Cell Hardware

5 Sq.cm Cell hardware for PEM Applications

10. Split Tube Furnace

Stainless Steel Shell

Ceramic shell heater with Nichrome 1000°C (1850°F),

Low K-factor vacuum cast ceramic fiber insulation

11. System Pressure

The system should have manual back pressure control

12. Horizontal Tube Furnace Specifications

1. Type of Tube Furnace : 1100⁰ C Tube Furnace
2. Hot zone dimensions : 50mm * 100mm (D*L)
3. Body dimension : 580 x 450 x 700mm (W*D*H) approx.
4. Maximum operation temperature : 1100⁰ C
5. Continuous working temperature : 1050⁰ C
6. Gas purging / Vacuum / Both : both
7. Insulation type : Fibber board insulation
8. Number of insulation layers: 2
9. Body type: MS body with non-rusting design
10. Additional: fans to control the body temperature
11. Heating element type: METALLIC
12. Thermocouple type and number: K Type
13. Controller specifications: Adjustable segments each Skip function to bypass a segment while the program is running Input of ramps,
14. Power rating: 3-4 KW
15. Power supply: 230 volts
16. Temperature Accuracy: ±1°C
17. Rate of heating: 10°C/ min
18. Hot zone tube: 50*45*1000mm
19. Flanges: SS flange for gas purging and vacuum
20. Vacuum spares: Flanges

13. Software Features :

The software system should support following items DC Electronic Load, Gas flow control, Gas Humidification, Cell Temperature control, Cell back pressure control, Large cell cooling, Reference electrode Monitoring ,Button Cell, Single cell and stack monitoring and testing programs and automated testing.

14. Software Techniques:

Open circuit voltage, Current scan, Voltage scan, Potential EIS, Constant load discharge, Constant voltage discharge, VIR-Polarization testing program, VIR-MR-Multiple range VIR, Life time program, Drive Cycle, Set protocol measurement, Run protocol measurement and AC Impedance measurement.

Humidifier bypass through software.

Preheater to avoid condensation, set temp thru software.

Labview based software for easy customisation.

15. Desktop Computer:

Computer System includes: Core i7 Processor, Hard Drive 1TB, 27-inch flat-screen with standard configuration,

16. Warranty:

1 year.

After the warranty provide AMC Charges.

Similar systems should be supplied nearby institutes with at least 5 installation with user contact.

17. Training:

Training should be provided to the students & staff who will be operating the system.

18. Optional Future Up-gradation Facility:

1. Methanol loop Peristaltic pump for Methanol, Ethanol and Acid cells in Optional
2. Automatic Backpressure System, 0-60 PSI, Anode and Cathode
3. PEM Attachments: Required accessories for PEM applications, including cell assembly
25 Sq.cm Cell hardware