



**TENDER DOCUMENTS**

**CHEMISTRY LAB EQUIPMENT**

**NUTECH/SCM/Chemistry Lab-2019/TD-030**

# NATIONAL UNIVERSITY OF TECHNOLOGY

## TENDER NOTICE

**National University of Technology (NUTECH)**

**NUTECH/SCM/Chemistry Lab-2019/TD-030**

Sealed bids are invited from Government / FBR Registered Firms for the procurement of Chemistry laboratory equipment for NUTECH Technology Labs.

1. Tender documents containing terms & conditions and detailed specifications of items can be downloaded from NUTECH website "<https://nutech.edu.pk/d-p.php>" w.e.f **12 Feb 2019**.
2. Quotations shall be submitted as per requirement of the tender documents.
3. Bidders will be required to submit bank draft/PO equal to 5% of quoted value as Bid Bond in favor of National University of Technology (NUTECH).
4. Sealed bids with detailed specification should reach on the following address latest by **1430 hours** on **01 Mar 2019**. Late submission will not be entertained.
5. Bids will be opened at **1500 hours** on **01 Mar 2019** at SCM Office.
6. Project is to be completed in 75 days from the date of award of contract.
7. Submit Rs 1500/- as Tender fee in favour of NUTECH, **Bank Alfalah Acct:5546-5001002354**. Please attach bank receipt with technical offer. Offers will not be entertained without payment of processing fee.

**Deputy Director (Supply Chain Management Office)**  
**NATIONAL UNIVERSITY OF TECHNOLOGY (NUTECH) UPROAD,SECI-12,**  
**ISLAMABAD**  
**Tel: 0092-51-5476768, Ext :178**



## NATIONAL UNIVERSITY OF TECHNOLOGY

### SUPPLY CHAIN MANAGEMENT OFFICE

#### INVITATION TO TENDER

**Submission Date/Time** 01 March 2019 at 1430 hours

1. NUTECH desires to procure the list of item(s)/Store(s) as per **Annexure-A**. Interested bidders are requested to send their bids through courier or deliver at NUTECH under two separate sealed envelopes (placed together in third envelope), marked clearly, "Technical Offer" and "Commercial Offer", respectively to the undersigned, latest by or before above mentioned due date. If due to any unforeseen circumstances, NUTECH establishment remains closed, then the last date of submission will be extended to next working day.

2. Please also note that Technical Offer should contain Annexes-A & B duly filled in (supported with relevant technical literature /details/ catalogues etc) and receipt of tender processing fee. Commercial Offer will contain Annexure-C and bid bond. Please ensure no space is left blank in the annexes and special instructions.

3. Following must be noted for this IT (Invitation to Tender):-

- a. 2 x copies of technical offer are to be provided.
- b. Annexes A, B and C must be signed and stamped, Attach only relevant documents.
- c. Please complete all document as per given format. Do not use any other format or letter head. Offer may be rejected if given format is not followed
- d. Validity of offer will be 90 days
- e. Delivery period will be 75 days from the date of award of contract..
- f. Tender(s) must be accompanied with a Bid Bond in agreement of faithful compliance of the conditions of Contract/Purchase Order. This amount will be equivalent to 5% of the total quoted value. In case of non-acceptance of any offer, the Bid Bond will be returned to the bidder by fastest possible means. The Bid Bond amount submitted by the successful bidder will however, be refunded on effective termination of Contract/ Purchase Order. (The Bid Bond will be forfeited in case of default by the bidder from his commitments made through his offer). Submission of Bid Bond is mandatory, otherwise your offer will be rejected.
- g. 2 years warranty against 5% bank guarantee will be required from the successful bidders

from the date of commissioning.

h. Rates should be quoted on Free Delivery basis at NUTECH Islamabad.

4. We reserve the rights to accept or reject any or all tenders as a whole or in part without assigning any reason whatsoever. The decision in this regard will be firm, final and binding on all bidders.

DD (Supply Chain Management)



**NATIONAL UNIVERSITY OF TECHNOLOGY**

**SUPPLY CHAIN MANAGEMENT OFFICE**

**TECHNICAL OFFER**

**Annex A**

User Reference No **Chemistry Lab Eqpt-002** Date: **21-01-2019**

**Technical Specification**

Ser	Items	Description	Country of Origin	A/U	Qty Req	Bidder Compliance			Tech Scrutiny to be done by user	
						Yes	No	Alternate Offer	Accepted	Rejected
<b>CHEMISTRY LAB EQUIPMENTS PHASE 2</b>										
1.	<b>FT-IR with ATR</b>	Standard Wavenumber Measurement Range 7,800 to 350 cm-1 Optional Extended Wavenumber Range 15,000 to 2,200 cm-1, 5,000 to 220 cm-1 Display Wavenumber Range 15,000 to 0 cm-1 (standard) Wavenumber Accuracy Within $\pm 0.01$ cm-1 (theoretical value) Maximum Resolution : 0.7 cm-1 Optical System : Single beam Optical path: Center focus, light axis 70 mm high Interferometer : 45° Michelson interferometer Corner cube mirror interferometer, with	North American / Europe	Nos	1					

		<p>auto-alignment mechanism, sealed structure, DSP control  N2 Purge  Interferometer, Sample Compartment, Detector  Mirror Coating : Aluminum  Drive Method : Mechanical bearing, electromagnetic drive  Drive Speed : Auto, 1, 2, 3, 4 mm/sec  AUTO DLATGS 2.0 mm/sec : MCT (optional) 4.0 mm/sec  Rapid Scan : 10 Hz (optional)  Beam Splitter Standard: Ge/KBr  Option: Si/CaF2, Ge/CsI (not interchangeable)  Light Source Standard: High-intensity ceramic source  Option: Halogen lamp (factory option only)  Detector : DLaTGS (with Peltier temperature control) (standard)</p>							
2	<b>Bio Fuel Cell Demonstrator</b>	<p>Small Scal BioFuel Cell Production unit.  Should Include Potentiometer  Motor module  ethanol fuel cell  Laboratory thermometer  Distilling head, 2 cores 75°, NS 19/26  Condenser  Alcoholmeter  Erlenmeyer flask 1000 ml  Areometer  Universal stand clamp  Stand rod 60cm, M10  Double clamp  Stand base plate</p>	North American and Europe	Nos	1				
3	<b>Fuel Cell</b>	Should Include	North	Nos	1				

	<b>Demonstrator</b>	PEM-, ethanol fuel cells fuel cell stacks Hydrogen generation and storage Includes all ancillary equipment	American and Europe						
4	<b>Photovoltaic Demonstrator</b>	Small scale Photovoltaic setup capable of doing basic experiments Power dependence on the surface area of the solar cell Power dependence on level of illumination under load Shading effect on solar cells Dark characteristic curve of solar cells I-V-characteristics, MPP and fill factor of solar cells Dependence of the I-V-characteristics of solar cells on level of illumination Temperature coefficient of solar cells	North American and Europe	Nos	1				
5	<b>GC with TCD and FID detector</b>	Gas Chromatograph with FID & TCD Detectors On-Column Injector  Built-in air compressor 1-meter Silica Gel Column Temperature Programmable Column Oven Electronic Pressure Control (EPC) for Carrier & Combustion Gases 4 channel PeakSimple Data System  Programmed oven temperatures from 50°C/min up to 300°C and 20°C/min from 300°C to 450°C  Peak Simple Software for Windows with built-in 4 channel serial data system	North American and Europe	Nos	1				

		Fast cool oven from 400°C to 50°C in less than 5 minutes for increased sample throughput Electronic pressure controls (EPC) maintains flat baselines over full temperature range, with highly stable retention times.							
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### Special Instructions

Description	Bidder			Tech Scrutiny to be done by User		
	Yes	No	Alternate Offer	Accepted	Rejected	Reasons of Rejection
<b>Environment Conditions:</b> (a) Temperature range: 0°C to +60°C (b) Relative humidity: 0-50% non-condensing						
<b>Warranty period:</b> Two years from the date of commissioning.						
<b>Training Notes:</b> Supplier will provide a set of handouts for training on operation and maintenance of the equipment						
<b>Publications:</b> Supplier is to provide hard and soft copies (CD) of following manuals. (a) <b>Operational / Maintenance manual:</b> - Qty 01 with Equipment and additional Qty 02 for record purposes and should consist of following sections:- (1) <b>Equipment Description /Operation:-</b> (a)Specifications (b)Description (c)Operation (2) <b>Servicing:-</b> (a)Maintenance Schedule (b )Adjustment / test (c)Removal / Installation procedure (d)Tools Used (3) Trouble shooting guide (4) Cleaning requirements (5) Shipping and receiving						



<p>(6) Storage requirements</p> <p>(b) <b>IPB</b> (Illustrated Parts Breakdown Manual) should have full parts description along with detailed diagrams (exploded view).</p> <p>(c) <b>Experimental manuals</b> which must contain the list and procedure of the experiments that equipment can perform.</p>						
<p><b>Spares / Technical Support:</b></p> <p>(a) Supplier to ensure in country spares and technical support / assistance for next 10 years</p> <p>(b) Any software provided must have its license</p> <p>(c) Software upgrade support must be provided free of cost for five years with renewed license at every upgrade</p> <p>(d) Supplier must also provide calibration service for at least five years after commissioning</p>						
<p><b>Additional Spare / Replaceable parts:</b></p> <p>(a) Replaceable spare / parts during scheduled inspections are to be identified (if any) and provided as per requirement along with equipment sufficient to cater five years consumption.</p> <p>(b) All specialized / standard tools ( if any) required for inspection / repair / servicing must be supplied along with equipment.</p>						
<p><b>Physical Inspection Criteria:</b> 100% physical inspection of store will be carried out before commissioning of the equipment for following details:-</p> <p>(a) For physical damage, major scratches and deformity.</p> <p>(b) Accessories /components as per contractual specifications.</p> <p>(c) Technical Manuals (Operation manual, user guide, IPBs).</p> <p>(d) Quality certificate and calibration certificate by the OEM</p> <p>(e) OEM certificate and verifiable documents by the supplier that store has been procured from certified</p>						

source and is factory new and from latest production. (f) Brand name and country of origin.						
<b>Commissioning:</b> (a) Commissioning of the equipment will be carried out by OEM rep at his own cost and risk at designated place at NUTECH. (b) Any special requirement for installation, operation and commissioning must be specified in the offer by the supplier.						
<b>Training:</b> 01 week OEM operational/ maintenance training at NUTECH						
<b>Improvement and Safety Measures:</b> Any improvement and safety measures suggested by NUTECH during commissioning are to be resolved by the supplier / manufacturer at no extra cost.						
<b>Liability of Supplier:</b> (a) OEM certificate of authorized dealership. Supplier is to provide original OEM certificate of subject equipment bought directly from the manufacturer and being an authorized dealer. (b) In case the equipment supplied is not compatible with specifications, the supplier will be obliged to call his representatives at his own cost for consultation and corrective action						

Firm Name _____ Signature _____ Name _____ Designation _____
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**NATIONAL UNIVERSITY OF TECHNOLOGY**  
**SUPPLY CHAIN MANAGEMENT OFFICE**

**TECHNICAL OFFER**

**Annex B**

User Reference No **Chemistry Lab Eqpt-002** Date: **21-01-2019**

**Please fill in the following essential parameters:**

1. Validity of Offer: \_\_\_\_\_ Days (Should not be less than 90 days)
2. Delivery Period: \_\_\_\_\_ Days (After Placement of order)
3. Country of Origin: \_\_\_\_\_
4. Warranty/Guarantee: \_\_\_\_\_ Months from the date of final acceptance of the stores.

**General**

GST No: \_\_\_\_\_ (Please enclose copy)

NTN/CNIC: \_\_\_\_\_ (if exempted, please provide valid exemption certificate)

**Payment Terms:**

1. 50 % advance payment (Against valid bank Guarantee)
2. 50% Payment after delivery, installation /commissioning, user satisfaction certificate

**Details of Payment Recipient**

(1) Name/Title: \_\_\_\_\_

(2) Address: \_\_\_\_\_

Firm Name _____
Signature _____
Name _____
Designation _____



**NATIONAL UNIVERSITY OF TECHNOLOGY**  
**SUPPLY CHAIN MANAGEMENT OFFICE**

**FINANCIAL OFFER**

**Annex C**

User Reference No **Chemistry Lab Eqpt-002** Date: **21-01-2019**

Ser	Items/Store	Description	A/U	Qty Req	Unit Price (Rs) (excluding GST)	GST (if applicable)	Custom Duty (Rs) (if applicable)	Total amount (Rs)
1.	FT-IR with ATR	Standard Wavenumber Measurement Range 7,800 to 350 cm-1 Optional Extended Wavenumber Range 15,000 to 2,200 cm-1, 5,000 to 220 cm-1 Display Wavenumber Range 15,000 to 0 cm-1 (standard) Wavenumber Accuracy Within $\pm 0.01$ cm-1 (theoretical value) Maximum Resolution : 0.7 cm-1 Optical System : Single beam Optical path: Center focus, light axis 70 mm high Interferometer : 45° Michelson interferometer Corner cube mirror interferometer, with auto-	Nos	1				

		<p>alignment mechanism, sealed structure, DSP control</p> <p>N2 Purge</p> <p>Interferometer, Sample Compartment, Detector</p> <p>Mirror Coating : Aluminum</p> <p>Drive Method : Mechanical bearing, electromagnetic drive</p> <p>Drive Speed : Auto, 1, 2, 3, 4 mm/sec</p> <p>AUTO DLaTGS 2.0 mm/sec : MCT (optional) 4.0 mm/sec</p> <p>Rapid Scan : 10 Hz (optional)</p> <p>Beam Splitter Standard: Ge/KBr</p> <p>Option: Si/CaF2, Ge/CsI (not interchangeable)</p> <p>Light Source Standard: High-intensity ceramic source</p> <p>Option: Halogen lamp (factory option only)</p> <p>Detector : DLaTGS (with Peltier temperature control) (standard)</p>						
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2	<b>Bio Fuel Cell Demonstrator</b>	Small Scal BioFuel Cell Production unit. Should Include Potentiometer Motor module ethanol fuel cell Laboratory thermometer Distilling head, 2 cores 75°, NS 19/26 Condenser Alcoholmeter Erlenmeyer flask 1000 ml Areometer Universal stand clamp Stand rod 60cm, M10 Double clamp Stand base plate	Nos	1				
3	<b>Fuel Cell Demonstrator</b>	Should Include PEM-, ethanol fuel cells fuel cell stacks Hydrogen generation and storage Includes all ancillary equipment	Nos	1				
4	<b>Photovoltaic Demonstrator</b>	Small scale Photovoltaic setup capable of doing basic experiments Power dependence on the surface area of the solar cell Power dependence on level of illumination under load Shading effect on solar cells Dark characteristic curve of solar cells I-V-characteristics, MPP and fill factor of solar cells Dependence of the I-V-characteristics of solar cells on	Nos	1				

		level of illumination Temperature coefficient of solar cells						
5	<b>GC with TCD and FID detector</b>	<p>Gas Chromatograph with FID &amp; TCD Detectors On-Column Injector</p> <p>Built-in air compressor 1-meter Silica Gel Column Temperature Programmable Column Oven Electronic Pressure Control (EPC) for Carrier &amp; Combustion Gases 4 channel PeakSimple Data System</p> <p>Programmed oven temperatures from 50°C/min up to 300°C and 20°C/min from 300°C to 450°C</p> <p>Peak Simple Software for Windows with built-in 4 channel serial data system Fast cool oven from 400°C to 50°C in less than 5 minutes for increased sample throughput Electronic pressure controls (EPC) maintains flat baselines over full temperature range, with highly stable retention times.</p>	Nos	1				

	<b>Total</b>			
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Bid Bond Ref \_\_\_\_\_

Total Gross Value \_\_\_\_\_

\*Custom duty is to be quoted separately.

\*\*Bid Bond to be attached with Annex C. Copy of Bid Bond be attached with  
 Technical offer without showing its value)

Firm Name \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Name \_\_\_\_\_  
 Designation \_\_\_\_\_