



TENDER DOCUMENTS

PHYSICS LAB EQUIPMENT

NUTECH/SCM/Physics Lab-2018/TD-013

NATIONAL UNIVERSITY OF TECHNOLOGY

TENDER NOTICE

National University of Technology (NUTECH)

NUTECH/SCM/Physics Lab-2018/TD-013

Sealed bids are invited from Government / FBR Registered Firms for the procurement of Physics 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>" w.e.f **22-12-2018**.
2. Quotations shall be submitted as per requirement of the tender documents.
 - a. Bidders will be required to submit bank draft/PO equal to 4% of quoted value as Bid Bond in favor of National University Of Technology (NUTECH).
3. Sealed bids with detailed specification should reach on the following address latest by **1100 hours on 22-01-2019**. Late submission will not be entertained.
4. Bids will be opened at **1130 hours** on **22-01-2019** at SCM Office.
5. Project is to be completed in 110 days from the date of award of contract.

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 22-01-2019 at 11 00 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). Commercial Offer will contain Annexure-C. Please ensure no space is left blank in the annexes.
3. Following must be noted for this IT (Invitation to Tender):-
 - a. Validity of offer will be 90 days
 - b. Delivery period will be 110 days
 - c. 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 4% 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.
 - d. 2 years warranty against 5% bank guarantee will be required from the successful bidders from the date of commissioning.
 - e. 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 MANGEMENT OFFICE

TECHNICAL OFFER

Annex A

User Reference No **Physics Lab Eqpt-001** Date: **07-12-201**

Technical Specification

Ser	Nomen/ Experiment	Description	Count ry of Origin	A/ U	Qty Req	Bidder Compliance			Tech Scrutiny to be done by user	
						Yes	No	Alternate Offer	Accepted	Rejected
									Reason of Rejection	
1	Basic measurement techniques	Vernier calliper stainless steel 0-160 mm, 1/20, Micrometer screw gauge 0-25 mm, Spherometer, Watch glass, d = 80 mm, Watch glass, d = 100 mm, Watch glass, d=125 mm, Iron wire, d = 1.0 mm, l = 10 m, Aluminium foil, set of 4 sheets, Glass plate, 100 mm x 85 mm x approx. 1 mm, Glass tube, straight, l = 80 mm, 10/pkg. Glass tube, do = 24 mm, di = 21 mm, l = 120 mm, Cubes, set of 8	North Americ an & Europe	No	5 each					
2	Newton's 2nd law	Smart Cart (red and blue), Cart Mass (set of 2) Dynamics Track Feet (Pair), Mass and Hanger Set, Elastic Bumper, Super Pulley with Clamp, 1.2 m Aluminum Dynamics Track, Friction Block, Braided Physics String, USB Bluetooth 4.0 Adapter	North Americ an & Europe	No	5 each					
3	Projectile motion	Mini Launcher, Time of Flight Accessory, Phone Jack Extender, Cable Photo gate Head, Photo gate Bracket, Carbon Paper, Large "C" Clamp	North Americ an & Europe	No	5 each					

		Plumb Bob (need 1 only) Metric Measuring Tape Digital Adapter, computer Interface							
4	Moment of inertia	Long Steel Rod (90 cm), Mini-Rotational, accessory, Mass Set (5g resolution), Rotary Motion Sensor, Computer Interface	North American & Europe	No	5 each				
5	Conservation of Energy Experiment / Free fall	Motion Sensor, Discover Free fall System Large Rod Base, 120 cm Rod, Multi Clamp 45 cm Rod, Motion Sensor Guard, Computer Interface, Digital Adapter	North American & Europe	No	5 each				
6	Physical Pendulum	Physical Pendulum Set, Rotary Motion Sensor Large Rod Stand, 45 cm Long Steel Rod Interface	North American & Europe	No	5 each				
7	Equation of state for ideal gases	Ideal Gas Law Syringe, Pressure/Temperature Sensor, Plastic Containers (2), Absolute Zero Apparatus, Computer Interface	North American & Europe	No	5 each				
8	Electric field and potential in the plate capacitor	Basic Electrometer, Basic Variable Capacitor Electrostatics Voltage Source, Computer Interface	North American & Europe	No	5 each				
9	Coulomb's law/image charge	Coulomb's Law Apparatus, Kilovolt Power Supply, Basic Electrometer Faraday Ice Pail, Charge Producers and Proof Plane	North American & Europe	No	5 each				
10	Faraday's law	Induction Wand, Variable Gap Lab Magnet Large Rod Base, 45 cm Steel Rod (2) Multi Clamp, Voltage Sensor, 2-Axis Magnetic Field Sensor Rotary Motion Sensor, Computer Interface, Resistive/Capacitive/Inductive Network	North American & Europe	No	5 each				

11	Ohm's law and Kirchhoff's laws	Resistive/Capacitive/Inductive Network, Voltage Sensors (3), Current Probe (2), Short Patch Cords (set of 8), Computer Interface	North American & Europe	No	5 each				
12	Magnetic Force on current carrying wire	Basic Current Balance, Current Balance Accessory, Ohaus Cent-o-Gram Balance, Low Voltage AC/DC Power Supply, Large, Base and Support Rod, Plug Cord-Red (5 pack), Plug Cord-Black (5 pack)	North American & Europe	No	5 each				
13	Determination of the earth's magnetic field	2-Axis Magnetic Field Sensor, Zero Gauss Chamber Rotary Motion Sensor Dip Needle Aluminum Table Clamp, 25 cm Stainless Steel Rod (threaded) Adjustable Angle Clamp, Angle Indicator, Interface Required: AirLink	North American & Europe	No	5 each				
14	Microwave optics system	Gunn Diode Transmitter with mounting stand, Receiver with built-in amplifier and mounting stand, Goniometer with fixed and rotatable arms and degree scale, Fixed-arm assembly for interferometer experiments, Component holders: two standard, one rotating, Rotating table Reflectors: two full reflectors (metal), two partial reflectors (wood), Polarizers (2), Diffraction slit hardware, Prism (Ethafom) with styrene pellets Microwave Accessory Package, Microwave Detector Probe	North American & Europe	No	5 each				

Special Instructions

Description	Bidder			Tech Scrutiny to be done by User		
	Yes	No	Alternate Offer	Accepted	Rejected	Reasons of Rejection
<p>Warranty period Two years from the date of commissioning. A warranty sticker is to be pasted on each item by the Supplier / OEM highlighting Name of Firm, Contract No and date, Description of Store and Warranty validity</p>						
<p>Training Notes Supplier will provide a set of handouts for training on operation and maintenance of the equipment</p>						
<p>Publications Supplier is to provide hard and soft copies (CD) of following manuals.</p> <p>(a) Operational / Maintenance manual: - Qty 01 with Equipment and additional Qty 02 for record purposes and should consist of following sections:-</p> <p style="padding-left: 20px;">(1)Equipment Description /Operation:-</p> <p style="padding-left: 40px;">(a)Specifications</p> <p style="padding-left: 40px;">(b)Description</p> <p style="padding-left: 40px;">(c)Operation</p> <p style="padding-left: 20px;">(2)Servicing:-</p> <p style="padding-left: 40px;">(a)Maintenance Schedule</p> <p style="padding-left: 40px;">(b)Adjustment / test</p> <p style="padding-left: 40px;">(c)Removal / Installation procedure</p> <p style="padding-left: 40px;">(d)Tools Used</p> <p style="padding-left: 20px;">(3) Trouble shooting guide</p> <p style="padding-left: 20px;">(4) Cleaning requirements</p> <p style="padding-left: 20px;">(5) Shipping and receiving</p> <p style="padding-left: 20px;">(6) Storage requirements</p> <p>(b) IPB (Illustrated Parts Breakdown Manual) should have full parts description along with detailed diagrams (exploded view).</p> <p>(c) Experimental manuals which must contain the list and procedure of the experiments that equipment can perform.</p>						
<p>Spares / Technical Support</p> <p>(a) Supplier to have in-country spares / technical support and ensure spares and technical support / assistance for next 10 years</p> <p>(b) Comprehensive list of spares required for scheduled maintenance of Equipment is to be provided</p> <p>(c) Any software provided must have its license</p>						

<p>(d) Software upgrade support must be provided free of cost for ten years with renewed license at every upgrade</p> <p>(e) Supplier must also provide calibration service for at least five years after commissioning</p>						
<p>Additional Spare / Replaceable parts.</p> <p>(a) Replaceable spare / parts during scheduled inspections are to be identified and provided as per requirement along with equipment sufficient to cater five years consumption.</p> <p>(b) All specialized / standard tools required for inspection / repair / servicing must be supplied along with equipment.</p>						
<p>Physical Inspection Criteria: 100% physical inspection of store will be carried out before commissioning of the equipment for following details:-</p> <p>(a) For physical damage, 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 source and is factory new and from latest production.</p> <p>(f) Brand name and country of origin.</p>						
<p>Commissioning</p> <p>(a) Commissioning of the equipment will be carried out by OEM rep at his own cost and risk at designated place at NUTECH.</p> <p>(b) Any special requirement for installation, operation and commissioning must be specified in the offer by the supplier.</p>						
<p>Training</p> <p>01 week OEM operational/ maintaince training at NUTECH</p>						

<p>Improvement and Safety Measures Any improvement and safety measures suggested by NUTECH during commissioning are to be resolved by the supplier / manufacturer at no extra cost.</p>						
<p>Liability of Supplier (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</p>						
<p>Special Notes (a) Additional requirements for the maintenance of equipment (if any) must be intimated by the supplier in technical offer. (b) Supplier must provide the list of organizations using same equipment in Pakistan (if any). (c) Equipment must be a standard product of OEM available at web address of OEM. (d) In case of premature failure of the equipment, OEM has to replace / rectify the item free of cost. Required transportation charges would be borne by the supplier.</p>						

Firm Name_____
Signature_____
Name_____
Designation_____



NATIONAL UNIVERSITY OF TECHNOLOGY
SUPPLY CHAIN MANAGEMENT OFFICE

TECHNICAL OFFER

Annex B

User Reference No **Physics Lab Eqpt-001**_____ Date: **07-12-201**

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: (Mandatory to mention) (Please tick/ mention the desired payment term/ mode)

1. 30 % advance payment (Against valid bank Guarantee)
2. 70% Payment after delivery, installation /commissioning, user satisfaction certificate
3. Others

Details of Payment Recipient

(1) Name/Title: _____

(2) Address: _____

Signature: _____

Official Seal: _____

Name: _____

Designation: _____



NATIONAL UNIVERSITY OF TECHNOLOGY
SUPPLY CHAIN MANAGEMENT OFFICE

FINANCIAL OFFER

Annex C

User Reference No **Physics Lab Eqpt-001** Date: **07-12-2018**

Ser	Nomen/ Experiment	Description	Qty Req	A/U	Unit Price (Rs) (excluding GST)	GST (If applicable)	Total amount (Rs)
1	Basic measurement techniques	Vernier calliper stainless steel 0-160 mm, 1/20, Micrometer screw gauge 0-25 mm, Spherometer, Watch glass, d = 80 mm, Watch glass, d = 100 mm, Watch glass, d=125 mm, Iron wire, d = 1.0 mm, l = 10 m, Aluminium foil, set of 4 sheets, Glass plate, 100 mm x 85 mm x approx. 1 mm, Glass tube, straight, l = 80 mm, 10/pkg. Glass tube, do = 24 mm, di = 21 mm, l = 120 mm, Cubes, set of 8	5				
2	Newton's 2nd law	Smart Cart (red and blue), Cart Mass (set of 2) Dynamics Track Feet (Pair), Mass and Hanger Set, Elastic Bumper, Super Pulley with Clamp, 1.2 m Aluminum Dynamics Track, Friction Block, Braided Physics String, USB Bluetooth 4.0 Adapter	5				
3	Projectile motion	Mini Launcher, Time of Flight Accessory, Phone Jack	5				

		Extender, Cable Photo gate Head, Photo gate Bracket, Carbon Paper, Large "C" Clamp Plumb Bob (need 1 only) Metric Measuring Tape Digital Adapter, computer Interface					
4	Moment of inertia	Long Steel Rod (90 cm), Mini-Rotational, accessory, Mass Set (5g resolution), Rotary Motion Sensor, Computer Interface	5				
5	Conservation of Energy Experiment / Free fall	Motion Sensor, Discover Free fall System Large Rod Base, 120 cm Rod, Multi Clamp 45 cm Rod, Motion Sensor Guard, Computer Interface, Digital Adapter	5				
6	Physical Pendulum	Physical Pendulum Set, Rotary Motion Sensor Large Rod Stand, 45 cm Long Steel Rod Interface	5				
7	Equation of state for ideal gases	Ideal Gas Law Syringe, Pressure/Temperature Sensor, Plastic Containers (2), Absolute Zero Apparatus, Computer Interface	5				
8	Electric field and potential in the plate capacitor	Basic Electrometer, Basic Variable Capacitor Electrostatics Voltage Source, Computer Interface	5				
9	Coulomb's law/image charge	Coulomb's Law Apparatus, Kilovolt Power Supply, Basic Electrometer Faraday Ice Pail, Charge Producers and Proof Plane	5				
10	Faraday's law	Induction Wand, Variable Gap Lab Magnet	5				

		Large Rod Base, 45 cm Steel Rod (2) Multi Clamp, Voltage Sensor, 2-Axis Magnetic Field Sensor Rotary Motion Sensor, Computer Interface, Resistive/Capacitive/Inductive Network					
11	Ohm's law and Kirchoff's laws	Resistive/Capacitive/Inductive Network, Voltage Sensors (3), Current Probe (2), Short Patch Cords (set of 8), Computer Interface	5				
12	Magnetic Force on current carrying wire	Basic Current Balance, Current Balance Accessory, Ohaus Cent-o-Gram Balance, Low Voltage AC/DC Power Supply, Large, Base and Support Rod, Plug Cord-Red (5 pack), Plug Cord-Black (5 pack)	5				
13	Determination of the earth's magnetic field	2-Axis Magnetic Field Sensor, Zero Gauss Chamber Rotary Motion Sensor Dip Needle Aluminum Table Clamp, 25 cm Stainless Steel Rod (threaded) Adjustable Angle Clamp, Angle Indicator, Interface Required: AirLink	5				
14	Microwave optics system	Gunn Diode Transmitter with mounting stand, Receiver with built-in amplifier and mounting stand, Goniometer with fixed and rotatable arms and degree scale, Fixed-arm assembly for interferometer experiments, Component holders: two standard, one rotating, Rotating table Reflectors: two full reflectors (metal), two partial reflectors (wood), Polarizers (2),	5				

		Diffraction slit hardware, Prism (Ethafoam) with styrene pellets Microwave Accessory Package, Microwave Detector Probe					
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Total Value _____

GST _____

Gross Total Value _____

Bid Bond Ref _____

Firm Name _____ Signature _____ Name _____ Designation _____
