

**PEC University of Technology, Chandigarh
Sector 12, Chandigarh 160 012**



**E-TENDER DOCUMENT FOR PURCHASE OF
EQUIPMENTS AS PER GROUP LISTED IN TABLE 1**

**BY
DEPARTMENT OF MATERIALS &
METALLURGICAL ENGINEERING**

PEC UNIVERSITY OF TECHNOLOGY, CHANDIGARH

SECTION	DESCRIPTION	PAGE NO.
I	INVITATION FOR E-TENDER	01
II	TERMS AND CONDITIONS OF CONTRACT	04
III	SCHEDULE OF REQUIREMENTS (TECHNICAL BID)	08
IV	PRICE SCHEDULE (FINANCIAL BID)	25
V	GENERAL TERMS AND CONDITIONS	26

SECTION I
INVITATION FOR E-TENDER
FOR PURCHASE OF EQUIPMENTS LISTED IN TABLE I

1. The PEC University of Technology, Chandigarh invites e-bids from eligible bidders for supply of equipments as per groups mentioned in Table-1.
2. Interested & eligible bidders may obtain further information from Prof. & Head/Prof R K Mahajan, Department of Materials & Metallurgical Engineering, PEC University of Technology, Sector 12, Chandigarh 160012, India.
3. The bidding document is downloadable from institute website <http://www.pec.ac.in> as well as website of Chandigarh Administration(<http://etenders.chd.nic.in>).
4. All bids must be accompanied by an EMD as specified in the bid document and must be delivered to the office address mentioned below by the date and time indicated below.
5. Bids will be opened in the presence of bidders' representative(s) who may choose to attend on the specified date and time.

TABLE 1: LIST OF GROUP OF EQUIPMENT'S, EMD AND PERFORMANCE SECURITY DEPOSIT

S. No.	Name of the Equipment	Quantity	EMD	Performance Security Deposit	Delivery Schedule		
Group 1							
1.	Rockwell cum Brinell Hardness Tester	02	65,000	@ 5% of the total value of the contract	45 Days		
2.	Micro Hardness Tester	01					
Group 2							
1.	Resistivity Measurement Apparatus (Four Probe setup)	01	20,000				
2.	Magnetic Characterization Unit (B-H Curve Tracer)	01					
3.	Curie Temperature and Dielectric Constant Measurement Unit for Ferroelectric Samples	01					
4.	LCR Meter	01					
Group 3							
1.	Vernier Caliper	02	2500				
2.	Micrometer	02					
3.	Bench Grinder Double	01					
4.	Air Compressor	01					
Group 4							
1.	Slow Speed Diamond Cutter	01	31,000				
2.	Double Disk Polishing Unit	04					
3.	Hot Mounting Press	01					
4.	Crystal Structure Model Kit	01					

5.	Metallurgical Microscope	01	
6.	Hydraulic Press	01	
Group 5			
1.	Simultaneous High Temperature DTA/TGA/DSC/DTG System	01	1,50,000
Group 6			
1.	Optical Emission Spectrometer	01	1,00,000
Group 7			
1.	Digital Thermo Couple Calibration Apparatus	01	20,000
2.	Table Top Tensometer	01	
3.	Young's Modulus Apparatus	01	
Group 8			
1.	Dip Coating Unit	01	7000

NOTE:

- **Separate bids are to be submitted for each Group.**

TABLE 2: TIME SCHEDULE

I	Date of Publication	Oct 13, 2017
II	Downloading of e-tender document	Start date: 13.10.2017 End date: 04.11.2017
III	Date of submission of e-tender	Start date:13.10.2017 End date:04.11.2017
IV	Physical submission of EMD, affidavit regarding not being black listed and other necessary pre-qualification documents (scanned copies)	Start date: 13.10.2017 End date:04.11.2017
V	Opening of Technical Bid (online) and meeting for scrutiny of technical bid and declaring eligible bidders	Date: 05.11.2017 at 1400 Hours (2.00PM)
VI	Opening of Financial Bid of only eligible technically qualified bidders as determined by the Committee	To be informed after checking eligibility of bidders
VII	Place of opening of bids	Seminar Room, Department of Materials & Metallurgical Engineering, PEC University of Technology, Sector 12, Chandigarh-160012

VIII	Address for Communication	Prof. & Head, Department of Materials & Metallurgical Engineering, PEC University of Technology, Sector 12, Chandigarh-160012 e-mail: headmett@pec.ac.in profkmahajan@gmail.com
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Important Notes:

I.	Bidders shall have to submit their bids on-line in electronic format with digital signatures.
II.	All terms and conditions, instructions to bidder regarding e-tendering process etc. may kindly be seen from the Detailed Notice Inviting Tender (DNIT) available on Chandigarh Administration website (http://etenders.chd.nic.in) or on the PEC University of Technology's website (www.pec.ac.in)
III.	The bidder has to submit the original documents in physical form such as EMD, & affidavit of not being black listed on the date fixed for the same as above. The failure will entail summarily rejection of its tender.
IV.	The under signed reserves the rights to reject or accept any or all tenders without assigning any reasons.

Director,
PEC University of Technology,
Sector-12, Chandigarh

PEC UNIVERSITY OF TECHNOLOGY, CHANDIGARH

SECTION II

TERMS AND CONDITIONS OF CONTRACT

1. Bidders are advised to study all technical and commercial aspects, instructions, forms, terms and specifications carefully in the tender document. Failure to furnish all information/documents required in the tender document or submission of a bid not substantially responsive to the tender document in every respect will be at the bidder's risk and may result in the rejection of the bid.
1. The tenderer should indicate specifically the basic price, packing and forwarding charges, GST and other charges separately. No additional information/document will be entertained after the due date.
2. **The tenderer should give their quotes in Indian currency only keeping in mind that our institute (PEC University of Technology, Chandigarh) is exempted from the payment of custom and excise duty. Custom & excise duty exemption certificate will be issued.**
3. The Bidders shall have to submit their Bids online in electronic format with digital signatures. For participation in the e-tendering process, the Bidders need to register themselves on <http://etenders.chd.nic.in/nicgep>. On registration, they will be provided with a user ID and a system generated password enabling them to submit their Bids online using Digital Signature Certificates (DSC).
4. Tenders without digital signatures will not be accepted by the Electronic Tendering System. No Tender will be accepted in physical form and in case, it has been submitted in the physical form only, it shall be rejected out rightly.
5. Technical Bids will be opened online as per time schedule mentioned in e-tender notice **(SECTION I Table 2)**.
6. Before submission of online bids, bidders must ensure that self-attested scanned copies of all the necessary documents as mentioned in **SECTION III "Technical Bid"** and **SECTION IV "Financial Bid"** of this tender document have been uploaded with the bid, failing which their bids may be out rightly rejected and will not be considered.
7. It is mandatory for all the bidders to upload all the documents mentioned under tender document.
8. Bidder is required to upload scanned copy of EMD as specified in the tender documents and send original along with other hard copies of desired documents to be sent in technical bid envelope.
9. The details of EMD specified in the tender documents should be the same as submitted online (scanned copies) otherwise tender will be rejected.
10. The conditional bids shall not be considered and may be rejected out rightly in very first instance.
11. The financial bids through e-tendering of only those bidders shall be opened who will qualify in the technical bid criteria.
12. The bidder must have an experience of supplying similar equipment in govt. institutes/departments/colleges/universities/research labs/industrial & commercial organizations etc. in India during last three financial years i.e. 2014-15, 2015-16, 2016-17.
13. An affidavit as per specimen enclosed as Annexure-2.2 of SECTION II should accompany the tender. The tenderer who has been black-listed or his/her tenders have ever been cancelled or any legal proceedings have ever been initiated/pending or any penalty has ever been levied on account of delay or non-completion of supply order by any State/UT/Central Government, his/her tender will be out rightly rejected. **A scanned copy of affidavit shall be uploaded online and in physical form along with EMD.**

14. Downloading and submission of tender will be done by E-tendering process through the online website of Chandigarh Administration <http://etenders.chd.nic.in/nicgep>.
15. **EARNEST MONEY DEPOSIT (EMD):** The Tender should be accompanied with Earnest money as mentioned in the Table-1 of SECTION I to be paid in the shape of A/C payee demand draft/banker's cheque/6 month FDR/bank guarantee from any Commercial Bank in favour of Director, PEC University of Technology Chandigarh which shall remain valid for a period of 45 days beyond final/financial bid validity period. **No firm/tenderer will be exempted from submission of EMD.** The EMD deposited by the tenderer in respect of another similar tender will not be considered against this tender. Apart from submission of EMD in physical form, scanned copy of EMD duly attested and counter signed by the firm shall also be uploaded. The EMD of unsuccessful tenders will be refunded immediately after finalization/allotment of tender. No interest will be payable on the EMD. The EMD will be forfeited, if the tenderer withdraws his/her bid after submission of the tender. Expression of interest without the EMD shall be rejected.
16. **TECHNICAL BID:** The tenderer should submit scanned copies of documentary proof of his/her eligibility as mentioned in SECTION III "Technical Bid" of this tender document.
17. Financial Bid will be opened of only those bidders who qualify in the technical bid criteria through e-tendering process.
18. **FINANCIAL BID:** The financial bid (SECTION IV) shall be submitted by the bidder through e-tendering. The financial bid should contain rates/prices only. The rates should be mentioned both in figures as well as in words. Any change in rate or term & conditions by the tenderer afterwards will entail for forfeiture of earnest money deposit, cancellation of tender and blacklisting of the firm.
19. The bid should not have corrections or over writing.
20. **PERFORMANCE SECURITY DEPOSIT:** The successful tenderer will have to deposit performance security @ 5% of the total value of contract awarded (Table-1 of SECTION I) within 15 days of issuance of work/supply order by the competent authority to be paid in the shape of bank guaranty from any scheduled bank in favor of Director, PEC University of Technology, Chandigarh and the security deposited in connection with any other similar tender will not be considered against this tender. Thereafter, the work order will be issued. If successful tenderer fails to submit the requisite performance security deposit within 15 days of supply order, earnest money deposit (EMD) deposited by the tenderer will be forfeited and order cancelled.
21. Tender received through e-tendering shall be opened online by the committee duly constituted by the authorities of PEC University of Technology, as per schedule given in tender notice in the Seminar Hall, Materials & Metallurgical Engineering Department, PEC University of Technology Chandigarh. In the event of date of opening of tender is declared a holiday, the due date of opening of the tender will be the next working day at the same hours.
22. The bidder shall submit the hard copy of e-tender along with forwarding letter (Annexure-2.1 of SECTION II as given on next page) duly signed.
23. The Director, PEC University of Technology Chandigarh reserves the right to accept or reject any or all tenders without assigning any reason.

ANNEXTURE- 2.1

From

Subject: Submission of Tender for Purchase of

Dear Sir/Madam,

With reference to your above-mentioned notice inviting tenders, I/We hereby offer to provide(Fill name of the item or items) to PEC University of Technology, Chandigarh.

I/We shall supply the Equipment(s) truly and faithfully as set forth in the terms and conditions of the e-tender document. I/We shall be responsible for all complaints as regards to the quality of product and in case of any dispute; the decision of the Director, PEC University of Technology, Chandigarh shall be final and binding on me/us.

A DD/banker's cheque/FDR No. _____ Dated _____ drawn on_____

amounting to Rs _____ (Rupees

_____Only) in favor of Director, PEC University of Technology, Chandigarh, payable at Chandigarh is enclosed as earnest money.

I/WE shall have no claim to the refund of earnest money/performance security deposited against this tender in the event of my/our non-compliance of the contract, provided such contract is completed within the period of validity of my/our tender and to the entire satisfaction of purchase committee of PEC.

I/We further understand that my/our earnest money and performance security shall stand forfeited in case of unsatisfactory supply of equipment's/service/violation of any term, or if I/We withdraw my/our tender at any stage during the period of validity. My/Our tender shall remain valid for a period of 120 days from the last date prescribed for submission of the tender against the above-mentioned notice.

My/Our tender along with terms and conditions with relevant columns and annexure duly filled in under my/our attestation and with each page of the tender paper including the enclosed terms and conditions signed by me/us (in the capacity of sole owner or authorized person (general or special power of attorney attached) is submitted for your favorable consideration.

I/We have read all the terms and conditions carefully and have signed the same in token of our absolute and unconditional acceptance.

Thanking you,

Place

Yours faithfully,
Signatures
Date with stamp
Name & Full
Address with
telephone/mobile
nos.

ANNEXURE-2.2

(To be furnished on non-judicial stamp paper duly attested by the 1st Class Magistrate or Notary Public)

AFFIDAVIT

I/We/M/s _____ is/are a registered
firm/establishment/organization/Company etc. as per Registration
Certificate No. _____ issued by _____
_____ having registered
office at _____
_____ (address) and manufacturing/supply base
at _____

_____ do here by declare and solemnly affirm that I/We have neither been black-listed nor mine/our tenders have ever been cancelled by any State/UT/Central Government, nor any partner or shareholder either directly or indirectly connected with has any subsisting interest in the business of my/our firm nor any legal proceedings have ever been initiated/pending or any penalty has ever been levied due to delay in non-completion/non-compliance of work/service/supply order by any State/UT/Central Government or by any authority.

Place: _____

DEPONENT

Dated: _____

Verification

I/We do hereby solemnly declare and affirm that the above declarations are true and correct to the best of my knowledge and beliefs. No part of it is false and nothing has been concealed therein.

Place: _____

DEPONENT

Dated: _____

SECTION III
"TECHNICAL BID"

TABLE 3: SCHEDULE OF REQUIREMENT

S.No.	Technical Specifications	Quantity
1.	<p>Rockwell cum Brinell hardness Tester:</p> <ul style="list-style-type: none"> • Manually operated • Minor load 10 Kgf • Additional test forces 50, 90, 140 kgf and 177.5 and 240 kgf • Total test force 60, 100, 150 kgf 187.5, 250 kgf • Test force selection by external dialing • Auto zero setting dial gauge • Following to be quoted along with machine • Testing table: 150 mm • Testing table two in number with V-groove for round jobs 1) 5-50 mm dia. and 2) 50 -100 mm dia. • Diamond indenter: 5 Nos. • Steel ball indenter 1/16 inch with 5 spare balls • Steel ball indenter 1/8", 1/4", and 1/2" with 5 spare balls of each size • Steel balls 2.5 mm with 5 spare balls (for Brinell) • Standard Test blocks Rockwell 'B': 20- 30 HRB, 50-60 HRB, 80-90 HRB (one each, total 3) Rockwell 'C': 20-25 HRC, 35-45 HRC, 55-65 HRC (one each, total 3) Rockwell 'A': < 30, 50-60, 80-90 HRA (one each, total 3) Brinell 2.5/187.5: 80-120, 200-250, 300-350 BHN • Tool kit: Allen spanner (5), screw driver (1), Clamping device (1), Wooden box for standard/additional accessories, machine cover, instruction manual 	02
2.	<p>Slow Speed Diamond Cutter:</p> <ul style="list-style-type: none"> • Capable of setting re-produceable cutting parameters • motor automatic shut off & capable of setting reproducible cutting parameters 	01

	<ul style="list-style-type: none"> • Built-in coolant tray and coolant pump with adjustable nozzle • Sample Chucks Bar and tube chuck. Irregular specimen chuck Wafer chuck Single saddle chuck • Digital speed display meter • Motor power 250 W, 220 V, 50 Hz • Sample dimension: 20mm dia. max. • Diamond blade: 3", 5" and 7" dia. (10 each) • Loading weight: 0-300g • Cutting method Rocker arm, automatic and home point setter after cutting • Rotational speed: 0-600 RPM adjustable • Movable stand travel: 25 mm • Positioning accuracy: 0.01 mm • Micrometer for cross feed adjustment: 0-25 mm • Automatic cut off switch • Down feed facility with different weights • True and parallel cutting • Extra coolant: 1 liter • Cutting area provided with transparent cover 	
3.	<p>Resistivity Measurement Apparatus (Four Probe setup):</p> <ul style="list-style-type: none"> ➤ Spring loaded Four Probe Arrangement with built-in thermocouple sensor ➤ Standard Samples: Ge, Si and Aluminum with known resistivity and resistance • Specifications of the Oven Controller <ul style="list-style-type: none"> ➤ Temperature Range: Ambient to 473 K or higher for variation of the temperature of the crystal. ➤ Resolution: 1K ➤ Stability: ± 0.5 K ➤ Measurement Accuracy: ± 1 K ➤ High Performance PID controller ➤ Display: 3½ digit, 7 segment LED with auto polarity and decimal indication ➤ Power: 150 W • Specifications of Multirange Digital Voltmeter <ul style="list-style-type: none"> ➤ Range: X1 (0-200 mV) & X10 (0-2 V) ➤ Resolution: 100 μV at X1 range 	01

	<ul style="list-style-type: none"> ➤ Accuracy: $\pm 0.1\%$ ➤ Display: 3½ digit, 7 segment LED with auto polarity and decimal indication ➤ Overload Indicator • Specifications of Constant Current Source ➤ Open Circuit voltage: 18 V ➤ Ranges: 0-20 mA & 0-200 mA (For low resistivity Samples like thin films of metals and alloys) ➤ Low Current Source Ranges: 0-2 μA, 0-20 μA, 0-200 μA, 0-2 mA (For highly resistive samples like thin films of polymers etc.) Accuracy: $\pm 0.25\%$ 	
4.	<p>Magnetic Characterization Unit (B-H Curve Tracer):</p> <ul style="list-style-type: none"> ➤ Variable magnetic field source and magnetic field displayed in Gauss ➤ A good quality solenoid coil ➤ Measurement Parameters: Coercivity, Retentivity, Saturation magnetization, Various Magnetic phase identification, Hysteresis losses ➤ Display: 3.5 digits ➤ Standard Samples: Soft Iron, Nickel, Hard Steel ➤ Mains Supply: 230V\pm10%, 50 Hz ➤ Manual ➤ Warranty: 01 Year • Optional: Oscilloscope 	01
5.	<p>Curie Temperature and Dielectric Constant Measurement Unit for ferroelectric Samples:</p> <ul style="list-style-type: none"> • Probe Arrangement: Unit consists of spring loaded probes mounted in a suitable stand which also holds the sample plate. • Leads to connect capacitance meter and temperature controller unit. • At least three or more standard ferroelectric samples with known Curie temperature less than 200 °C. • Specifications for temperature controller unit: Temperature Range: Room temperature to 200°C or higher Display: 3½ digits, 7 segments LED with auto polarity & decimal indication Resolution: 0.1°C or lower Accuracy: $\pm 0.5^\circ\text{C}$ or lower 	01

	<p>Stability: $\pm 0.1^{\circ}\text{C}$ Power: 150W</p> <ul style="list-style-type: none"> • Specifications for Capacitance measurement unit: Range: 50-6000 pF Resolution: 1pf Display: $3\frac{1}{2}$ digits, 7 segments LED 	
6.	<p>LCR Meter:</p> <ul style="list-style-type: none"> • Frequency Range: 1mHz-1MHz • Accuracy: 0.08% basic accuracy • Speed: < 20 milli second measurement time • Measurements Parameters : Impedance (Z), Phase Angle (θ), Capacitance (C) Dissipation Factor / $\tan \delta$ (D), Inductance (L), Quality Factor (Q), AC Resistance (R) DC Resistance (Rdc), Reactance (X), Admittance (Y), Susceptance (B), Conductance (G) or more with series parallel circuit mode, Contact check function • Solid Sample holder for measurement of AC Parameters in Bulk Samples • AC Drive Level: 10 mV to 5 V_{rms} • DC Bias Voltage: Internal: 5V, • Interface: GPIB, USB , RS232 • AC power cord, User Manual, Calibration Conformity Certificate, control software • Warranty: 01 year • Kelvin clips and Test fixture 	01
7.	<p>Vernier Calliper:</p> <ul style="list-style-type: none"> • Mitutoya Brand 6" • Hard Chrome plating. • Digital display. • Screw locks for both Vernier and Main scale. • Jaws for outer and inner measurements. • Bar for depth. • Provision for fine and fixed measurement. • Least count = 0.02 cm. 	02
8.	<p>Micrometer: A Quantity: 1</p> <ul style="list-style-type: none"> • Range: 0-25 mm • Resolution: 0.001 mm • Accuracy: $\pm 2 \mu\text{m}$ 	02

	<ul style="list-style-type: none"> • Flatness: 0.3 μm • Parallelism: 1 μm • Measuring faces: Carbide tip • Display: LCD for large character readout • Battery: suitable with life of about one year • Mitutoya make • Zero set key for easy setting • Automatic on/off, inch/cm conversions • Reference/standard sample of known dimension <p>B</p> <p>Quantity: 1</p> <ul style="list-style-type: none"> • Range: 25-50 mm • Resolution: 0.001 mm • Accuracy: $\pm 2 \mu\text{m}$ • Flatness: 0.6 μm • Parallelism: 1 μm • Measuring faces: Carbide tip • Reference / standard sample of known dimension • Equipped with Ratchet stop for constant measuring force 	
9.	<p>Bench Grinder Double:</p> <ul style="list-style-type: none"> • Wolf make 8" Bench Grinder • Motor: 350W Induction Motor • No Load Speed: 2950 rpm • Med Grinding Stone: 200 mm dia. x 20 mm – 60 grit • Coarse Grinding Stone: 200 mm dia. x 20 mm – 24 & 36 grit • Spindle Hole: 16 mm dia. • Protective Eye Shields • Tool Rests 	01
10.	<p>Air Compressor:</p> <p>Direct drive AC air compressor</p> <ul style="list-style-type: none"> • Two pressure gauges one for pressure setting in the receiver and one for controlling outlet pressure • Pressure switch with overload protection for safety in voltage fluctuation • Vent for release of excess pressure • Pressure regulator • Shock absorber pads • Wheels for portability • Polyurethane stretchable hose for easy use <ul style="list-style-type: none"> ○ Motor rating: 2 HP ○ Cylinder 	01

	<ul style="list-style-type: none"> ○ Stage ○ Air receiver capacity: 24 liter ○ Maximum pressure 8 bar or 116 psi ○ Noise level: 80 db ○ Electrical supply: 220 V, Single phase, 50 Hz 	
11.	<p>Dip Coating Unit:</p> <ul style="list-style-type: none"> ● Dipping & Lifting Speeds: 0.5-450 mm/min with arrow display ● Deposition Arm Movement: 150mm ● Deposition Cycles: 35,000 (Max.) ● Film length :100 mm (desirable) ● Dry & Wet Times: 59,999.9min (Max.) ● Preset Editable Recipes: 10 ● Input & Control Option: Keypad ● Unlimited deposition cycles ● Substrate mount/un-mount options 	01
12.	<p>Double Disk Polishing Unit:</p> <ul style="list-style-type: none"> ● Two discs over which polishing paper or cloth can be stretched ● Variable speed up to 1200 RPM ● 1 H.P. single phase motor driven disc ● Corrosion Resistant wash bowl free flow drain ● Flexible water jet with control valve ● Operation of the machine with 220V AC ● Lapping wheel dia. 200 mm ● Noise: low 	04
13.	<p>Hot Mounting Press:</p> <ul style="list-style-type: none"> ● Diameter of the specimen: 25 mm, 40 mm, 50 mm ● Permanent mounting of samples ● Power supply: single phase, 220V ● Activated by a hydraulic press, capacity 10 ton or less ● Temperature is controlled with digital controller ● Timer facility is given within the panel 	01
14.	<p>Simultaneous High Temperature DTA/TGA/DSC/DTG System:</p> <ul style="list-style-type: none"> ● The system should have built-in DTA/TGA/DSC mode with simultaneous scanning facility in single run. ● Temperature range from 15 °C to 1600 °C with suitable cooling attachment. 	01

- The system should have heating and cooling rates from 0.1 to 100°C/min up to 100 °C per min and 25°C per min up to 1600°C.
- The system shall have small mass furnace with best temperature control.
- Minimum TGA Balance sensitivity shall be 0.2 micro grams with 0.02% accuracy.
- DTA sensitivity shall be 0.001 °C.
- DTA signal should have provision to convert into DSC mode/signal for quantitative studies.
- Thermocouple sensor shall be Pt - Pt/Rh.
- User replaceable sensor for future with vertical design for sample loading.
- Calorimetric precision should be less than + 2% upto 1000 °C and +/- 5% upto 1600 °C.
- Temp accuracy and reproducibility should be +/- 0.5°C upto 1000°C and 1°C up to 1600 °C.
- All the three curves/parameters like TGA/DTA/DTG or DSC to be displayed on single screen.
- TGA should have ultra-microbalance with minimum 0.2 µg sensitivity with top load design.
- Sample size shall be upto 1500 mg with sample pan. The balance shall have excellent stability with no need for anti- vibration table needed for installation.
- Built-in Mass Flow controller for two different gases viz. nitrogen(N₂), oxygen(O₂) or any other. It should also select the flow of gases through software and shall be displayed on the screen.
- The system shall be supplied with Pt and Ceramic/Alumina pans.
- The system should be single beam vertical design with ease of operation for sample loading.
- The system shall be quoted with sub-ambient according to start from 15 °C onwards.
- The system shall cool down from 1000 °C to 30 °C in less than 10 minutes.
- The system shall have future upgrade path for FTIR and 16 MS for EGA studies. Vendor shall quote FTIR for EGA studies with necessary interface from same manufacturer/vendor preferably. Single PC

	<p>control for EGA will be preferred i.e. both for FTIR and STA.</p> <ul style="list-style-type: none"> • Various Metal Reference Materials for DSC calibrations to be included in offer. • The system should have built in Windows 7 based software with 8 modules to be controlled simultaneously. It should also include Kinetics software along with main unit. Standard software shall have the flexibility of various standard calculations like onset, peak area, compare, derivatives, subtraction, % weight loss, overlay of curves, delta Y calculations, multi-step programming, gas switch over, heat/cool, etc. 							
15.	<p>Crystal Structure Model Kit:</p> <ul style="list-style-type: none"> ➤ Crystal Structure Model Sets with rare collection of ball and sticks of plastic. ➤ Three dimensional demonstrations crystal structures in transparent acrylic show cases. ➤ Fixed assembly of crystals structures listed below: <ul style="list-style-type: none"> ➤ Cubic, (SC, BCC, FCC) ➤ Triclinic ➤ Monoclinic ➤ Orthorhombic ➤ Tetragonal ➤ Hexagonal. ➤ Each structure must pack in a separate box. 	01						
16.	<p>Digital Thermocouple Calibration Apparatus:</p> <table border="1"> <tr> <td>Temperature measurement</td> <td> <p>Ambient to 750 °C for 'J' type Ambient to 1350 °C for 'K' type Ambient to 1700 °C for 'S' type Ambient to 1700 °C for 'R' type Ambient to 400 °C for 'T' type The choice of thermocouple is done through a manual selector switch.</p> </td> </tr> <tr> <td>Calibration facility</td> <td> <p>For the calibration of J, K, S, R, and T type of temperature indicators.</p> </td> </tr> <tr> <td>Resistance measurements</td> <td> <p>Resistance Range : 0.1 ohm to 1K ohm, Resolution : 0.1 ohm, Accuracy : ± 0.1%</p> </td> </tr> </table>	Temperature measurement	<p>Ambient to 750 °C for 'J' type Ambient to 1350 °C for 'K' type Ambient to 1700 °C for 'S' type Ambient to 1700 °C for 'R' type Ambient to 400 °C for 'T' type The choice of thermocouple is done through a manual selector switch.</p>	Calibration facility	<p>For the calibration of J, K, S, R, and T type of temperature indicators.</p>	Resistance measurements	<p>Resistance Range : 0.1 ohm to 1K ohm, Resolution : 0.1 ohm, Accuracy : ± 0.1%</p>	01
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Calibration facility	<p>For the calibration of J, K, S, R, and T type of temperature indicators.</p>							
Resistance measurements	<p>Resistance Range : 0.1 ohm to 1K ohm, Resolution : 0.1 ohm, Accuracy : ± 0.1%</p>							

	Simulation facility	0 to ± 100 mV for any thermocouple with digital read out in corresponding $^{\circ}\text{C}$.
	Accuracy	$\pm 0.3\%$ of mV for T, J & K type thermocouples, $\pm 0.2\%$ of mV for R & S type thermocouples
	Resolution for calibration	1 $^{\circ}\text{C}$
	Ambient temperature compensation	Automatic
	Digital display during calibration	in Degree Celsius
	Power	230 V $\pm 10\%$ AC, 50 Hz
	Features:	Reliable electronic design, User friendly calibrators, Excellent calibration facilities with digital read out, Resistance calibration facility from 0.1 ohm to 1 K ohm for RTDs and thermistors, Complete coverage to J, K, S, R, and T type of thermocouples and temperature gauges.
	Warranty	1 year
17.	<p>Table Top Tensometer: A compact and table top computer controlled fully automatic horizontal tensile testing machine of 20 KN capacity for testing tensile, compressive, shear, flexural, properties of different materials.</p> <ul style="list-style-type: none"> • Capacity: 20 KN • Load cells of capacity 2 KN, 5 KN, 10 KN and 20 KN for high precision measurement • Servo motor drive • Precise elongation measurement (accuracy 1%) • Window based material testing software for complete test control • Programmable computer interface for data as well control • Test report generation indicating load, peak displacement, breaking load • Online curve plotting of load vs. displacement • Accessories (essential) <ul style="list-style-type: none"> ○ Grips for materials such as metals, polymer, ceramic sheet, rod, wires 	01

	<p>shapes in tension, shear, compression and bend</p> <ul style="list-style-type: none"> • Over load protection • Over travel protection 	
18.	<p>Young's Modulus Apparatus:</p> <ul style="list-style-type: none"> • A scale plate carrying a 0 to 30 mm scale • A moveable vernier readable to 0.1 mm • Scale Plate and moveable vernier, both have bars with clamping screws for the wires and hooks for the tension weight and loading masses. • Should be supplied with clamp for fitting • A tension weight, mass 1.3 kg approx. for the comparison wire is also included • Complete with load masses and wires. 	01
19.	<p>Metallurgical Microscope: Metallurgical Microscopes for identification and analysis of the structures of different metals and alloys.</p> <p>Eye piece Tube: Trinocular observation Inclined at 30/45 degree with inter pupillary distance adjustment range from 55 to 75mm.</p> <p>Eyepieces: W.F. 5X, 10x, 15X & 20X Paired.</p> <p>Objectives: Plan Achromat PL10x, PL 20x, PL 40x (S.L.), PL 60x (S.L).</p> <p>Stage: Mechanical Stage, size 150X200mm cross travel range 15X15mm.</p> <p>Illumination: Koehler system, 6V, 20W halogen lamp, adjustable brightness.</p> <p>Focusing System: Coaxial coarse and fine focusing system with sophisticated for stage gear reduction mechanism.</p> <p>Camera with C-Mos Technology. AMC for three years to be quoted separately. Spare parts: One spare set of eyepieces and objective lenses.</p>	01
20.	<p>Hydraulic Press:</p> <ul style="list-style-type: none"> • One 15 Ton table top Hydraulic press • Press Construction : Side Plate Construction • Max. Capacity: 15 Tons (Tolerance +/- 1 Ton or 12-15 Kg/sq.cm.) • Max. Ram Stroke : 50 mm • Daylight separation between plates : 90 mm • Cylinder Type : Single acting, up stroking • Pump Type : Hand operated • Platen Size : 100 mm (approximately) 	01

	<ul style="list-style-type: none"> • Safety Feature : Pressure Release Valve to safe guard against applying over-pressure • Warranty: 01 years • Accessories: should be quoted separately 	
21.	<p>Micro Hardness Tester:</p> <ul style="list-style-type: none"> • Hardness scale: (Micro-) Vickers, Knoop • Load application: Load cell, force feedback, closed loop system. The load vs. displacement (depth) and modulus of elasticity can be measured and displayed. • Load range: 5gf up to 10Kgf or wider • Motorized turret : 6 positions; 2 indent or positions, 4 objectives positions • Optical system: High definition, 5 Mega pixel machine Vision system. • Objectives: 10x, 20x, 40x, 60x, 100x. • Illumination :12V 30 Watt Halogen/LED • Measuring microscope: Min. graduation 0.01µm • Measuring range: 250 µm • Optical functions: 2-way (microscope/photographic device) • Camera of reputed brand. • Electronic system: MS Windows®, min 15" color industrial touch screen, automatic and manual measurement • Focusing: Auto focus facility with Motorized Z Axis. • Test loads:5gf, 10gf, 20gf, 25gf, 50gf, 100gf, 200gf, 300gf, 500gf, 1kgf, 2kgf, 2.5kgf, 3kgf, 4kgf, 5kgf, 6.25kgf, 10kgf • Vickers test range: HV0.010, HV0.020, HV0.025, HV0.050, HV0.1, HV0.2, HV0.3, HV0.5, HV1, HV2, HV2.5, HV3, HV4, HV5, HV10 • Knoop HK0.01, HK0.02, HK0.025, HK0.05, HK0.1, HK0.2, HK0.3, HK0.5, HK1, HK2, HK5 • Indenters Factory certified indenters calibrated according to standards. • Test Blocks Vickers , Knoop • Test cycles: Fully automatic, automatic and manual Standards Complies to ISO, ASTM, standards Test force accuracy • Test force accuracy: EN-ISO 6507/ ASTM E384 • Display resolution: 0.1 HV, HK, 0.5 HB • Result display: length of the diagonal, hardness, converted value and test force N, kgf, limits, GO/NG, average, standard 	01

	<p>deviation, regression, dwell time, no. of tests etc.</p> <ul style="list-style-type: none"> • Data output: Built-in printer • Analysis Software: Supplier Software must be provided • Hardness conversion: Rockwell, Rockwell Superficial, Brinell • Statistics Total test: max, min, average, range, standard deviation, all in real time after each test. • Connectivity: USB ports, RJ45 Ethernet LAN, W-LAN, RS-232, Blue Tooth, CNC & motorized X-Y stage connector. • Dwell time: setting 1 to 99 seconds (1 sec increments) • Manual Focus: XY Stage – 100 x 100 mm travel with digital micrometer (Automatic reading of hardness measurement required) • Operating temperature: 10°C to 45°C • Humidity: 10% to 90% non-condensing • Power supply: 100VAC to 240VAC, 50/60Hz, single phase UPS to be provided (inbuilt) or externally for uninterrupted power supply (if required). • Installation & Training: On site • Local support: Shall provide excellent service support for the supplied instrument through factory trained personnel. • Warranty: 01 year from the date of installation & successful commissioning • AMC: Shall have capability to undertake AMC • operating and maintenance manual: Proper operating and maintenance manual (soft & hard copy) of the instrument including do's & don't and troubleshooting option for breakdown must be provided 	
22.	<p>Optical Emission Spectrometer:</p> <ul style="list-style-type: none"> ○ Design <ul style="list-style-type: none"> ➤ The model should be compact and with inbuilt spark stand ➤ Instrument shall be suitable for testing of Ferrous and non-ferrous samples OR ➤ Ferrous & non-ferrous (Aluminum and copper base alloys etc.). 	01

(Only one shall be purchased but both should be quoted by the bidders)

- It shall be based on spark technique.
- **Spark Stand**
 - Spark stand design shall be in a way that samples of all geometries and sizes (Dia 1 m.m. to 20 m.m. or more) can be placed for testing and dedicated calibration for wires from 1 mm to 10 mm is needed.
 - Easily exchangeable spark stand plate- rapid sample change facility.
- **Configuration**
 - An instrument shall be fully automated, PC controlled, multifunctional, direct reading optical emission spectrometer based on latest advances in spectroscopy and CCD based technology for instant and direct metallurgical analysis of metal and alloy samples in solid form.
- **Optical Systems**
 - Shall have multiple optical systems with high dispersion.
ii) Optical System shall have best possible spectral and pixel resolutions (quantitative values to be mentioned).
- **Detectors**
 - Instrument shall have high resolution CCD multi detectors or combination of CCD &PMT detectors.
 - Minimum 12 or more CCD detector required to cover entire working spectrum.
 - CCD detector shall have least 2000 pixels per CCD.
 - Detectors to cover complete range of UV and Visible spectrum
- **Focal Length**
 - 300 mm or more Gratings

	<ul style="list-style-type: none"> ➤ High resolutions grating of 2000 gr/mm or better ○ Software <ul style="list-style-type: none"> ➤ Supplier shall provide the original analytical software and also a back up copy. ➤ Required a User friendly software ➤ Preloaded antivirus with latest version along with licensed CD ○ Operating temperature Range <ul style="list-style-type: none"> ➤ Instrument to work between 10 deg. to 30 deg C. ➤ Drift free and stabilized against fluctuations in temperature. ➤ It is to be Shock mounted so that vibrations do not affect system performance ○ Power consumption <ul style="list-style-type: none"> ➤ It is to be minimum and supplier must mention the power rating of the equipment. ○ Calibration and Blank setting <ul style="list-style-type: none"> ➤ Calibration process shall be simple and fast. ➤ Automatic diagnosis system to locate the faults and errors. ○ Data result <ul style="list-style-type: none"> ➤ It shall be possible to obtain test results directly and printed in % by mass and PPM form. ➤ Storage of complete spectrum of elements for future reference. ○ Safety <ul style="list-style-type: none"> ➤ The design of equipment shall ensure safety of operators and equipment at all times. ➤ A master switch board shall be provided on the machine to stop the operation during an event of emergency. ➤ Exhaust filters system for flushing out of argon gas. <p>Standard Accessories</p> <ul style="list-style-type: none"> ○ Personal Computer: 	
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	<ul style="list-style-type: none"> ➤ Latest branded PC having minimum 4 GB DDR RAM, 160 GB HDD or higher. ➤ Installed with original licensed Window 7 operating system, provided with compatible cables and ports so as to establish instrument to PC and printer connectivity ➤ USB- drive for transfer of analysis results Or iv) Latest available configuration ○ Minimum 2KVA online UPS with inbuilt isolation transformer, minimum 30 minutes backup for uninterrupted power supply ○ Monitor: Flat panel LED/ LCD, Minimum 22" display screen ○ Printer: Latest branded laser jet, A4 size colour printer ○ Additional items: <ul style="list-style-type: none"> ➤ Operation and maintenance manual to be provided in hard and soft copy form with the unit. ➤ Application notes (CD- ROM) for elemental analysis in ferrous, copper, aluminum, zinc alloys. ➤ 5 numbers of Standard samples for the respective matrix shall be quoted. ➤ Service manual with set of required tools for each system/ unit. ➤ Spare parts catalogue one set. ➤ Troubleshooting charts of all sub-units. ➤ Dust cover for all sub units. ➤ Operation kit comprising all required items, pump, tubing, transfer tubing, work coils etc. for startup/ regular operation of instrument. ➤ Consumables for two years operation of system for main OES unit are required to be supplied. ➤ All the operation and maintenance and manuals. ○ Optional items <ul style="list-style-type: none"> ○ Argon consumption: It shall be minimum and supplier must mention the power rating of the equipment. Two big Argon gas cylinders having 	
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	<p>99.998% pure gas. Double stage argon gas regulator with stainless steel diaphragm.</p> <p>Other Items</p> <ul style="list-style-type: none"> ○ Warranty for one year at site from the date of satisfactory installation shall be provided by the manufacturer. Any spares needed during this period shall be provided by the supplier free of cost. Further the manufacturer/ supplier shall be able to provide after sales services or AMC at the location where instrument has been installed. ○ Necessary reference material/ CRMs for the range specified in the application of the instrument shall be provided ○ The supplier shall enclose at least three Performance certificate from organization of national repute along with the address and contact number of responsible persons who have been using the instrument for a period of minimum three years. ○ The instrument supplier has to demonstrate the performance of the instrument using various CRMs to the satisfaction of PEC purchase committee. The supplier shall provide the training to faculty and staff at the site for the operation and general routine maintenance after installation. ○ Original catalogues with relevant features shall be supplied along with the bids. ○ Successful bidder will have to inform the Bureau regarding civil work/ any other arrangement required to be made for installation and complete working of OES sufficiently in advance before supplying the equipment. The same may be determined by prior visit to the premises where OES has to be supplied. ○ Bidder has to declare servicing agent in India. 	
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OFFER WILL BE ACCEPTED/UPLOADED IN TWO COVERS UNDER DETAILS CONTAINING: FIRST COVER TITLED as “Technical Bid” should contain the self-attested scanned copies of following with consecutive Sr. No:

1. Name of the firm/organization’s authorized person, his telephone/ Mob. No. /e-mail/Fax number on letter head of the company/firm/organization.
2. Earnest money deposit as mentioned in Point 15 of SECTION II of this tender document.
3. Bidder should have a turnover of at least Rs. 15 Lakhs in each of the last three financial years i.e.

2014-15, 2015-16 and 2016-17. Copies of audited/un-audited (as applicable) financial statements should be attached.

4. Self-attested copies of PAN/TAN Card/GST No.
5. Certificate of acceptance of terms & condition mentioned in Section II and Section V of tender document.
6. Manufacturer's authorization certificate.
7. Registration Certificate of the micro/small/medium enterprises, company issued by the competent authority.
8. Affidavit of not being black listed (Affidavit as per **Annexure 2.2 of SECTION II**)
9. Covering letter (**Annexure 2.1 of SECTION II**)
10. List of user customers of said equipment(s).
11. Proof of supplying similar equipment in teaching & research institutes, industrial organizations etc.

NOTE: All above mentioned documents should be duly in order and are essential to qualify for Technical Bid.

PEC UNIVERSITY OF TECHNOLOGY, CHANDIGARH

**SECTION IV
FINANCIAL BID**

SECOND COVER TITLED AS “FINANCIAL BID” CONSIST OF

Financial (Price) Bid for Purchase of Equipments listed in table 1 of section II to be delivered by the bidder in the Department of Materials & Metallurgical Engineering, PEC University of technology, Sector 12, Chandigarh is to be submitted online in excel sheet provided.

Notes:

1. Rate should be quoted in Indian Rupees showing custom duty/excise duty & other taxes, if any, separately on FOR PEC, Chandigarh basis.
2. The institute is registered with the Department of Scientific & Industrial Research (DSIR) for purpose of availing custom duty exemption in terms of Govt. Notification no. 51/96-Customs dated 23.07.1996 and Central Excise Duty Exemption in terms of Govt. notification no. 10/97- Central Excise dated 01-03-1997 as amended from time to time.

PEC UNIVERSITY OF TECHNOLOGY, CHANDIGARH

SECTION V

GENERAL TERMS AND CONDITIONS

1. Clarification of Bidding Documents

A prospective Bidder requiring any clarification of the bidding documents may notify the PEC in writing or by email or fax or telephone/mobile at the PEC's mailing address indicated in the Invitation for bids. The PEC will respond in writing to any request for clarification of the bidding documents which it receives for submission of bids prescribed by the PEC.

2. Amendment of Bidding Documents

At any time prior to the deadline for submission of bids PEC may for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by amendment. In order to allow prospective bidders a reasonable time to take the amendment into account in preparing their bids, the PEC, at its discretion, may extend the deadline for the submission of bids.

3. Language of Bid

The bid prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and the PEC shall be written in English language. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the bid, the translation shall govern.

4. Period of Validity of Bids

Bids shall remain valid for 120 days after the deadline for submission of bids prescribed by the PEC. A bid valid for a shorter period shall be rejected by the PEC as non-responsive.

5. Opening of Bids by the PEC

The PEC will open the technical bids in the presence of bidders' representatives who choose to attend on 05.11.2017 at 1400 hrs (2.00PM) and in the following location:

Seminar Room
Department of Materials & Metallurgical Engineering
PEC University of Technology,
Sector 12, Chandigarh, 160012

The Bidders' representatives who will be present shall sign a register evidencing their attendance. In the event of date of opening of tender being declared a holiday, the due date of opening of the tenders will be the next working day at the same hours and venue.

6. Warranty

The entire system of each & every equipment shall be in warranty (from OEM) for a period of one year from the date of successful commissioning & handing over the system.

7. Payment

- Payment for Goods and Services shall be made in Indian Rupees only as follows:
 1. on Final Acceptance.
 2. 100 percent of the Contract Price shall be paid on Successful commissioning, Installation, Training and Satisfactory performance/working.
- The Suppliers shall request for payment to PEC in writing accompanied by an invoice in duplicate describing as appropriate, the goods delivered and the services performed, and by documents, submitted and upon fulfillment of other obligations stipulated in the contract.
- Payments shall be made promptly by the PEC.

- Payment shall be made in Indian Rupees only.
- No advance payment will be made. Payment will be released after satisfactory receipt of goods/materials, successful commissioning/working, demonstration/training and installation.

8. Documents comprising the Bids

The Bids prepared by the tenderer shall comprise of following components:

- Bid to be furnished as per the format for technical specifications.
- Technical literature for each product/service, covering full technical specifications.
- Bid prices, all taxes shown separately, should be quoted item wise as per format provided in excel sheet only, duly signed by the authorized person and complete as per the format.
- Maximum educational institution discount as could be offered should be mentioned.

9. Others Terms and Conditions

- An EMD/bid security of equipment should be submitted in the form of an account payee demand draft/banker cheque/6 month FDR/bank guarantee from any Commercial Bank valid for 45 days beyond final bid validity period in favour of Director PEC University of Technology, Chandigarh. **Tender without earnest money shall be considered unresponsive and rejected out rightly.**
- A Performance security of 5% of the total cost of the equipment will have to be deposited by the successful bidder awarded the supply order in the form of Bank Guarantee from a scheduled bank, which should be valid for 60 days beyond the completion of warranty/contract period.
- Performance Security will be forfeited and credited to the institute (PEC University of Technology, Chandigarh) in the event the supplier does not honour the warranty/contract and other terms and conditions of the tender.
- Price quoted, all taxes/levies shown separately, should be on FOR PEC, Chandigarh basis.
- The Institute is registered with the Department of Scientific & Industrial Research (DSIR) for purpose of availing custom duty exemption in terms of Govt. Notification no. 51/96- customs dated 23.07.1996 and Central Excise Duty Exemption in terms of Govt. notification no. 10/97-Central Excise dated 01-03-1997 as amended from time to time.
- The delivery period for supply of the various equipments shall be varying from 30 to 60 days from the date of supply order. The penalty will be charged @0.5% of the total cost of equipment FOR PEC per week after the expiry of delivery period mentioned in the purchase order if the request for extension of delivery date made by the supplier is not accepted by the PEC. Extension may not be granted.
- Detailed catalogue should be sent along with supply of equipment.
- All legal disputes will be subject to Chandigarh Jurisdiction and will be interpreted under Indian Laws.
- The Director PEC University of Technology reserves to himself the right to reject any or all tenders without assigning any reasons.
- The firm who has been black listed by Centre/StateGovt./UT/Boards/Corporations/any government authority/PEC University of Technology is not eligible for the Tender.
- **All rates should be quoted FOR PEC University of Technology, Chandigarh.**
- The institute being a premier Government Education and Research Institute funded by Chandigarh Administration, discounts as applicable to Research Institute/Educational Institutes may be provided in the tender.
- The bidders shall not be allowed to change/alter or modify the bids after expiry of the

deadlines for the receipts of bids.

- The firm is entirely responsible for any damage or losses occurred to the equipment/material in the transit. The firm will not lodge any complaints regarding the damage occurred in the transit and shall bear all expenses.
- In a tender, either an Indian agent on behalf of the Principal/(Original Equipment Manufacturer) OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same tender for the same item/product.
- EMD/Performance security will stand forfeited if a bidder withdraws its bid during the period of bid validity specified by the bidder in the bid form, and in case of successful bidder, if the bidder fails to supply the equipment or to furnish performance security in accordance with the tender.
- Bids received after the due date will not be considered.
- The tenderer is required to bring their own testing and measurement instruments which are required for the installation, commissioning and testing. These can be taken back after completion of the process.
- In case, any free gift scheme/cash scheme is launched by the company same will be offered by the vender to PEC University of Technology, Chandigarh free of cost.
- Generally the bid offer will be received/opened on the day as specified in the schedule, If the scheduled date is declared a holiday, and then the tender shall be received/opened on the next working day at the same time.
- The agency shall arrange to provide demonstration/training to the faculty/lab staff regarding operation/maintenance of equipment free of cost.
- A technical compliance chart of the quoted equipment mentioning technical specifications of quoted product verses asked specifications is compulsory. Attach the compliance chart with technical bid.
- Tender validity should be 120 days from the opening of tender.

All terms and Conditions of this tender document are acceptable to me/us.

Signature of Bidder

PERFORMANCE SECURITY FORM

(On Non-Judicial Stamp Paper)

BANK GUARANTEE BOND FOR PERFORMANCE WARRANTY

To

The President of India,
Through the Director PEC University of Technology,
Sector-12, Chandigarh-160012

Dear Sir,

Sub: _____

1. You, on behalf of President of India, have entered into a contract with reference No. _____ with _____ (here with after referred to "as the contractor/supplier") for the development, fabrication and supply of (here in after referred to as stores) for the price and on the terms and conditions contained in the said contract.
2. In accordance with the terms of said contract the Contractor has undertaken to produce a Bank Guarantee for Rs. _____ being 5% of (Rs. _____) of the total value of the said stores supplied to you for the due fulfillment of its obligations to the President of India for due performance as per the contract during warranty period.
3. In consideration thereof, we happily, expressly, irrevocably and unconditionally undertake and guarantee as principal obligors on behalf of the contractor that in the event that the President of India submits a written demand to us that the contractor has not performed according to the contractual obligations included in the said contract, we will pay you on the written demand, without demur and without reference to the contract or any sum up to a maximum amount of Rs. _____ (Rupees _____). Your demand shall be conclusive evidence to us that such repayment is due under the terms of the said contract. Payment by us to you will be made within (30) days from receipt of your written request making reference to this guarantee and on demand.
4. This guarantee shall not be revoked without your express consent and shall not be affected by your granting any indulgence to the contractor, which shall include but not be limited to postponement from time to time of the exercise the same in any manner at any time and either to for bear or to enforce any covenant continued or implied in the said contract or any other course remedy or security available to you, and our bank shall not be released from its obligations under this guarantee by your exercising any of your rights with reference to matters afore said or any of the morbid reason of any other indulgence shown by you or by any other matter or thing what so ever which under law would, but for this provision, have the effect of relieving our bank from its obligation under this guarantee.
5. Not with standing anything here in contained, our liability under this guarantee is restricted to Rs. _____ (Rupees _____) and the guarantee shall remain in force up to and including the day of being reported to us by you returned to us duly discharged.

6. Unless a demand or claim under this guarantee is made on us in writing on or before the afore said expiry date as provided above or unless this guarantee is extended by us all your rights under this guarantee shall be prescribed and we shall be discharge from the liabilities here under.
7. This guarantee shall not be affected by any change in the constitutions of our bank or of the contractor or for any other reason whatsoever.

We, _____
lastly undertake not to revoke this guarantee during its currency except with the prior consent from your office in writing.

8. Notwithstanding anything contained herein:
 - i. Our liability under this Bank Guarantee shall not exceed Rs. _____ (Rupees. _____).
 - ii. This Bank Guarantee shall be valid upto _____.
 - iii. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before _____.
9. This Bank Guarantee shall be returned to our.....Branch atonce the purpose of the issuance has been fulfilled or upon expiry of this guarantee whichever is earlier. Even return of Original Bank Guarantee is essential for invoking the guarantee with specific request letter from the beneficiary.

Witness: _____, Signature _____

Witness: _____, Signature _____

For _____ Bank For _____ Bank

Authorized Signatory

Authorized Signatory